A HANDBOOK OF THE PRISMATIC ASTROLABE

BY

JOHN BALL, O.B.E., D.Sc. (LOND.),

AND.

H. KNOX-SHAW, M.A., F.R.A.S.

B321

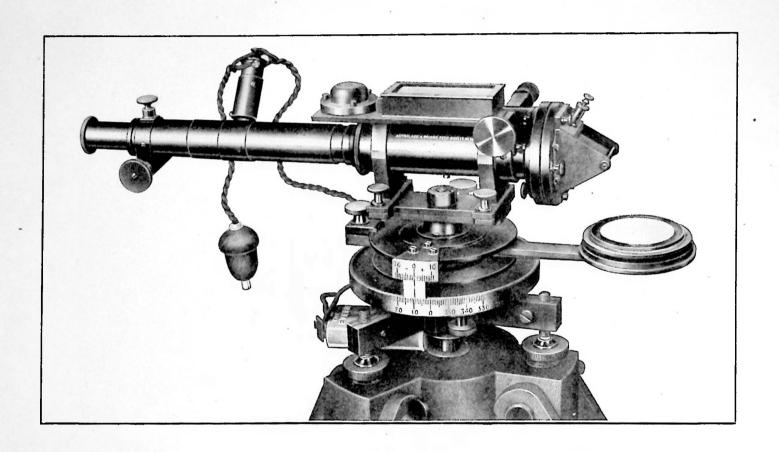
See article on combined theodolite and prismatic actualable in Seoz J., London, Jan. 1923, pp. 41-44

Egypt -Survey + AIAZ TI-4. Carro (Egypt) Small 4to, for Georgesphian & Undrological Surveyors There & tell figure Scarre, nor net -(foxing), test fine. Dane Stang & Lescard on T.p. Veno.

> ALSONASI ALGONASI



HANDBOOK OF THE PRISMATIC ASTROLABE.



A

HANDBOOK

OF THE

PRISMATIC ASTROLABE

BEING

A CONCISE AND PRACTICAL GUIDE TO THE EMPLOYMENT OF THE INSTRUMENT IN THE FIELD, DESIGNED FOR THE USE OF GEOGRAPHICAL AND HYDROGRAPHICAL SURVEYORS

WITH

STAR-TABLES ADAPTED FOR THE EASY PREPARATION OF PROGRAMMES OF OBSERVATION IN ANY LATITUDE FROM 55° NORTH TO 55° SOUTH

BY

JOHN BALL, O.B.E., D.Sc. (LOND.),

PH.D., M.INST.C.E., F.R.G.S., OF THE SURVEY OF EGYPT,

AND

H. KNOX-SHAW, M.A., F.R.A.S.,

DIRECTOR OF HELWAN OBSERVATORY.

PUBLISHED BY THE EGYPTIAN GOVERNMENT.

CAIRO.

GOVERNMENT PRESS.

To be obtained, either directly or through any bookseller, from the GOVERNMENT PUBLICATIONS OFFICE, Old Ismailia Palace, Sharia Qasr el Chini, Cairo.

1919.

PRICE: P.T. 50 or 10s. 6d.

DEMI. TLAY ISTRIAL DESNETICES OF CARTES A INSTITUTION, WAS HINGTON, D. S.

20233

DISCARD BY

PREFACE.

Our interest in the prismatic astrolabe was first keenly aroused by the perusal of a paper on "The Astrolabe and Wireless," by Col. Woodroffe, R.E., in the "Geographical Journal" of May 1916. We had of course previously known that the instrument had yielded results of great precision in the hands of the French colonial surveyors; but such considerable advances in accuracy had been recently made in Egypt in determining time and latitude with the theodolite by applying to it the principle of equal altitudes, that we were inclined to doubt whether the use of the astrolabe, which is based on the same principle of equal altitudes, would enable results of still higher precision to be obtained. Colonel Woodroffe advocated the use of the astrolabe with great enthusiasm as the result of his experience with it on the Peru-Brazil boundary survey, and his paper was very suggestive, more especially as to the use of the astrolabe in conjunction with wireless time-signals; but it did not decide the question of the relative merits of the astrolabe and theodolite when the method of equal altitudes was employed with the latter instrument. That point could only be settled by comparative trials of the two instruments under field conditions, and we accordingly set ourselves the task of carrying out such trials. In 1916, through the kindness of the Egyptian Government, we procured a small astrolabe from Paris and familiarized ourselves with the working of the instru-To compensate for any unfairness to the astrolabe through using the small-sized instrument, we made the comparison with a small theodolite of about the same telescopic power, and in every other way we endeavoured to make our comparisons free from prejudice. The results of our trials are briefly summarized in Chapter VI of this book.

The trials left no doubt as to the gain of accuracy by the use of the astrolabe, and it was clearly evident that on surveys where the fixing of a number of isolated positions with the utmost possible precision is the essential object (as happens on boundary surveys and in the astronomical control of triangulation), the astrolabe possesses distinct advantages over every other field-instrument. The use of the astrolabe on ordinary geographical and hydrographical surveys was, however, found to be bound up with some difficulties, of which two were specially marked.

The first of these difficulties was the lack of any book giving an elementary and at the same time fairly full exposition of the theory and construction of the instrument and of its use in the field, more especially of the small model as adapted to ordinary geographical surveys. The French treatise, by the talented inventors of the instrument, MM. Claude and Driencourt, is a fine and scholarly piece of work; but it is concerned with various types of astrolabe and is too abstruse for the ordinary field surveyor.

The second difficulty was the great preliminary labour of preparing programmes of stars for observation. Colonel Woodroffe, who found that it occupied no less than five months of his spare time to prepare star-lists for the three degrees of latitude over which his operations extended, drew attention to this difficulty, and recorded his belief that its abolition by the publication of star-tables for a wide range of latitude would lead to a very much wider application of the astrolabe.

These two difficulties we have set ourselves to remove by the present handbook, to the best of our ability and to the utmost extent which the time at our disposal has permitted. To circumscribe our labours within practicable limits, we have considered only the smallest type of astrolabe, and have included in our star-lists only Nautical Almanac stars of the fourth magnitude and brighter which are observable within the middle 40° of each quadrant; our reasons for selecting these particular limits are given on page 4. There can be no better introduction to the larger types of instrument than practice with the small one; and the star-lists, while they will doubtless need supplementing for refined geodetic work, will yet, we trust, be found sufficient for all ordinary geographical and hydrographical surveys, even where a very considerable degree of precision of result is aimed at.

Incidentally in the course of our investigations we were led to devise a new method for the reduction of observations made with the astrolabe; our method will, we think, be found to present very distinct advantages over that hitherto employed.

The work of preparing the book and tables has occupied a considerable proportion of our spare time for the last two years, and it was originally our intention to publish the work unofficially as a contribution to progress in geographical measurement. The Egyptian Government has, however, kindly offered to relieve us of the expense of publication, by publishing the book from its own press, as being

a work likely to be of general utility on boundary and other surveys after the war. We desire here to express our gratitude to the Egyptian Government for the encouragement it has given to us during the preparation of the book, and for its public-spirited action in undertaking the publication of a scientific work not specially concerned with Egypt.

It is our earnest hope that this little handbook may help towards an extended application of MM. Claude and Driencourt's ingenious and useful invention. We shall be grateful for any criticisms and suggestions from users of the instrument, either as to our notes on the practice of observation or as to the extent and accuracy of our tables.

Cairo, October 10, 1918.

J. B. H. K. S.

T				
		•		
* 2.	•			
	,			
	•			
		•		
		,		
			4	
•			•	
· ·				
`			•	
1 10				
	•			
			•	
	9.0			
	*			
•				
	,			100
	4	•		
		1.40		
	•			
			•	
	7	•		
4				
				*

CONTENTS.

CHAPTER - Transfer	PAGE
I.—Introduction	1
II.—Description of the prismatic astrolabe and its adjustments	8
III.—Preparation of programmes for observation	18
IV.—Instructions for observing	22
V.—Instructions for computation	33
VI.—Remarks on the comparative merits of the astrolabe, sextant, and theodolite as instruments for determining geographical position	48
INDEX	283
TABLES.	
I.—Star-tables, showing the local sidereal times and azimuths at which all Nautical Almanac stars of 4.0 magnitude and brighter cross an altitude-circle of 60° within the middle 40° of each	
quadrant, in any latitude from 55° N. to 55° S	55
II.—Refraction-table for altitude 60°	278
III.—Reduction of arc to time	279
IV.—Alphabetical star-index, giving the right ascension of all stars included in the star-tables, for facilitating reference to the	-282

				,		
		2.				
						•
			, .			
•						•
'						
1-2		•				
,						
		•				
	,					
						. ,
						• .

						,
	17					
		4				
,						
					,	
· .						

HANDBOOK OF THE PRISMATIC ASTROLABE.

CHAPTER I.

INTRODUCTION.

The prismatic astrolabe is an instrument invented by MM. Claude and Driencourt, Member of the French Bureau of Longitudes and Chief Engineer of the Hydrographic Department of the French Admiralty respectively, and made by M. Jobin of Paris. It is designed for the purpose of determining local time and latitude simultaneously with a high degree of precision, and has been used with great success in recent surveys in many parts of the world.

The instrument is made in three sizes, of which the smallest is best adapted for use in ordinary geographical surveys or in shore observations on hydrographic surveys where a precision of about 1" in either geographical coordinate is the degree of accuracy aimed at. In the present handbook this smallest size (the petit modèle of M. Jobin, a view of which is shown in the frontispiece) will be specially considered. The use of the larger instruments, yielding results of higher precision, will present no difficulty to anyone accustomed to working with the smallest size of instrument.

A very detailed treatise on the prismatic astrolabe and the manner of its employment in the precise determination of latitude and time is contained in the French work Description et Usage de l'Astrolabe à Prisme by MM. Claude and Driencourt.* That treatise is, however, mainly concerned with the use of the larger forms of the instrument for geodetic purposes, and is consequently too mathematical and too detailed for the ordinary geographical or hydrographical surveyor, who must work out his results quickly on the spot and who is not required to determine positions with quite geodetic precision. An excellent short account of the use of the astrolabe in conjunction with wireless time-signals on boundary surveys has been given in a paper by Major (now Colonel) Woodroffe, R.E.† This paper,

^{*} Published by Gauthier-Villars, Paris, 1910.

^{† &}quot;The Astrolabe and Wireless," Geographical Journal, XIVII (1916), pp. 345-358.

which is the only description of the use of the astrolabe up to the present existing in English, is most interesting and suggestive, but is too brief to serve as a manual of instruction in the use of the instrument; and moreover, like the French work referred to above, on which it is partly founded, it is concerned mainly with the application of the larger type of astrolabe to precise geodetic work, rather than with the use of the smaller form of the instrument in ordinary geographical and hydrographical surveying.

The present handbook aims at presenting to geographical surveyors, and to hydrographic surveyors who require to make accurate observations ashore, a clear and concise guide to the use of the instrument, with the necessary tables for rapid preparation of programmes of observation in any latitude, and with a description, illustrated by a clearly worked out example, of a much simpler method of computation than that which has hitherto been employed; all being adapted to the degree of precision attainable under the ordinary conditions of geographical exploration and hydrographic survey, and divested of refinements which are of no practical importance under such conditions. At the same time we hope the book will prove of service to surveyors who employ the larger sizes of astrolabe in the more refined geodetic measurements; for the scientific principles underlying the use of the astrolabe, which have been kept in view throughout, are the same for all types of the instrument, and our method of computation is applicable to observations of the highest degree of precision.

The determination of local time and latitude by means of the prismatic astrolabe depends, as in ordinary sextant-observations, on the simultaneous observation of the chronometer-times and altitudes of suitably chosen stars. But with the astrolabe, instead of the different stars being observed at different altitudes, as is commonly done with the sextant, all the observations are made at a fixed and invariable altitude of 60°, so that no circle-readings are required. As with the sextant when used ashore, the observation consists in noting the time at which the direct and reflected images of a star pass each other in the field of view of the instrument; but in the astrolabe the artificial horizon forms part of the instrument itself, instead of being separate. And with the prismatic astrolabe, instead of the line of sight being inclined as with the sextant, all the stars are observed by looking through a horizontal telescope, the observer sitting comfortably in a chair whilst observing.

With the sextant it is usual to make a number of successive observations on each star; but with the astrolabe only a single observation of each star can be made. At first sight this would appear to place the astrolabe at a considerable disadvantage as compared with the sextant; but any weakness of the astrolabemethod arising from the restriction that only a single observation of each star is practicable is counterbalanced by the ease with which a large number of stars can be observed in a short time and by the higher degree of precision of a single astrolabe-observation as compared with one made with a sextant. For in the astrolabe all indexerrors, circle-errors, and errors of eccentricity are totally eliminated, while errors due to uncertainty of refraction are rendered so small as to be negligible; and owing to the fact that the observer is freed. from all care about circle-readings and consequently is able to concentrate all his attention on the taking of the time, the precision with which the time can be noted is higher with the astrolabe than with the sextant.

Using even the smallest size of astrolabe, a very little practice will enable an observer to determine the time within one-tenth of a second, and the latitude within about 1", by a couple of hours' observation.

The instrument is self-contained and very portable, and the adjustments are few and easily made.

Owing to the circumstance that in astrolabe-observations the telescope remains always horizontal and is not pointed directly at the stars, it is necessary always to prepare a programme of observations beforehand. This can be accomplished in a few minutes by means of the tables given in this book.

The computation of the results is carried out in a special manner, differing considerably from that of ordinary sextant observations, and the final determination of the chronometer-error and latitude is made by a simple graphic construction analogous to that employed in the "new navigation" method of finding a ship's position. When a series of eight stars are observed, as will be the usual practice, the reduction of the results will usually occupy from three to four hours. If desired, practically the whole of the numerical computation may be completed before the observations are taken, leaving only a few minutes' work to be done by the graphic method after the observations have been made.

In the following chapters will be given:-

- (1) A description of the prismatic astrolabe and its adjustments.
- (2) Instructions and tables for making out a programme of observations for any place and time.
- (3) Instructions for observing.
- (4) Instructions for computation, with a worked-out example.
- (5) Remarks on the comparative merits of the astrolabe, sextant, and theodolite as instruments for determining geographical position.

The star-tables, which form a special feature of our work, will, we trust, remove at one stroke what has hitherto been perhaps the greatest obstacle to the employment of the prismatic astrolabe on geographical and hydrographical surveys—the great preliminary labour of preparing programmes of observation. In the preparation of the tables we have been guided by the following considerations:—

- 1. The stars employed should be chosen from those of which the apparent positions are tabulated at ten-day intervals in one of the national ephemerides, such as the "Nautical Almanac" or the "American Ephemeris," so that the observer is freed from the labour of reducing apparent positions to date. The "Nautical Almanac" contains the positions of more bright stars (3.5 magnitude and brighter) than the "American Ephemeris," though the latter has a marked advantage when fainter stars are concerned.* We have confined our tables to stars contained in the "Nautical Almanac," that being the publication most widely used by British surveyors.
- 2. Only stars of the fourth magnitude and brighter are suitable for easy observation with the small-sized astrolabe, and we have accordingly confined our tables to stars of this class. When the moon is shining, even stars of the fourth magnitude may be too faint for easy observation, and under such circumstances it may be necessary to confine the programme of observation to stars brighter than 3.5 magnitude; as the magnitudes are given in our tables, it will be easy to make a proper selection.
- 3. Only stars which cross the altitude-circle of 60° at azimuths within about 20° of the NE., SE., SW., and NW. points of the horizon should as a rule be included in the programme of observation. We have been led to this conclusion partly from a theore-

Mag. 3.5 and brighter. - Mag. 4.0 and brighter. Nautical Almanac... ... 244 310

American Ephemeris 230

370

^{*} The numbers of stars, apart from circumpolars, whose apparent places are tabulated in the two publications for 1918 are:—

tical consideration of the astrolabe, and partly from our experience with the instrument. If both the angle of the prism and the refraction at 60° of altitude are accurately known, observation of any two stars will determine time and latitude; and it can easily be shown that in this case the azimuths of the two stars should differ by 90° for the greatest accuracy in the result. In general the angle of the prism and the refraction will not be very precisely known, and in that case three stars must be observed, the best condition being that the three stars should differ by 120° of azimuth from each other. But if only three stars are observed, only the minimum number of observations necessary for the solution of the problem are taken, and a mistake in any one of the three may be fatal to the result. If we take four stars, a mistake in any one of the observations is at once perceived on making the graphic construction for the result; consequently at least four star-observations are desirable at each station. And it can be shown that when four stars are observed, the most favourable condition is that the stars should differ by 90° of azimuth from each other. An ideal arrangement would be to choose four stars, two on the meridian on opposite sides of the zenith, and two on the prime-vertical, likewise on opposite sides of the zenith; the one pair would give us a good latitude, and the other a good time-determination. But here we encounter the great limiting condition of the astrolabe, viz. that the altitude is a fixed quantity of 60°, and only a small number of bright stars will be found to cross the altitude-circle of 60° at azimuths very near to the meridian. By taking stars near the middle of the four quadrants, i.e. as near as possible to the azimuths NE., SE., SW., and NW. we satisfy the theoretical condition of the azimuths being about 90° apart, and at the same time we ensure a sufficiency of stars being available for the observation within a reasonable time of each other. We recommend that whenever possible eight stars should be observed, two in each of the four quadrants, to afford a thorough check on the work of observation. It will usually be found practicable to observe this number of stars without spreading the observation over more than about two or three hours.

As normal limits for our tables we have chosen 20° of deviation from the NE., SE., SW., and NW. azimuths, being desirous of keeping as nearly to the 90° of separation as possible, while maintaining the limits of azimuth sufficiently wide to permit of a fair number of stars being included. The distribution of stars over the

celestial sphere being, however, far from uniform, it will occasionally happen that in a given latitude a considerable interval may elapse without any star of sufficient brightness crossing the 60° altitude-circle within the assigned azimuth-limits. Whenever considerable gaps of this kind have been found to occur, we have endeavoured to bridge over them by including a few stars outside our normal limits. We have also generally carried the tabulation of stars slightly beyond the normal limits of azimuth, in cases where it will be useful for interpolation-purposes in preparing programmes for latitudes intermediate between the round degrees for which the tables are compiled. We have distinguished all stars which lie outside our normal limits of azimuth, but which have been included in our tables for either of the above reasons, by printing them in italics.

The star-tables, which are computed from the apparent positions for 1918, will in course of time need revision, on account of the cumulative changes in apparent position brought about by precession; but these changes occur with such slowness that the utility of our tables for the preparation of programmes of observation will not be sensibly affected for the next ten years or more.

For facilitating reference to the "Nautical Almanac" in finding the apparent places of stars for a given date, we have prepared an index, which will be found on pages 281–282, giving all the stars mentioned in our star-tables in the alphabetical order of their names, with their approximate right-ascensions. A reference to this index will at once indicate the approximate R.A. of any particular star, and the required page of the "Nautical Almanac" (wherein the stars are tabulated in order of R.A.) can then be at once found without any troublesome searching.*

In our calculations for the star-tables, we have made use of the excellent abaque of the French Hydrographic Service and of other graphic calculators devised by ourselves, for taking out hour-angles and azimuths. These have saved us a great deal of work, and though the times and azimuths found by the use of graphic methods are a little less precise than would have resulted from rigorous numerical calculation, we believe that the tables are correct to about one minute of time and a single degree of azimuth, which is all that is commonly necessary for the preparation of programmes.

^{*} We have preferred to index the right-ascensions of the stars, rather than the pages of the "Nautical Almanac," in order that the utility of the index may remain unimpaired by any changes which may be made in the pagination of the "Almanac" in future years.

In our method of computing the latitude and time from the observations, we have departed radically from the procedure of MM. Claude and Driencourt, as the result of our experience with the instrument. Instead of assuming the latitude and time to be known and calculating the altitudes, we assume the latitude and altitude to be known and calculate the times; and we then proceed to the graphic construction with differences of time as our basis. instead of differences of altitude. The advantages of our method are, firstly, that the chronometer-error is not required to be known, even to a very moderate degree of approximation, before the computation is commenced; secondly, that the computation is made shorter and easier by avoiding the use of either natural numbers or Gaussian logarithms, requiring in fact no other logarithmic tables than those of the trigonometric functions, such as are carried by every surveyor; and thirdly, that almost all the computation can be done before the observations are taken. Every leader of an exploratory expedition will appreciate the convenience of this lastnamed feature of our method, for it is frequently desirable to be sure of one's position before commencing the next day's march; and to be able to determine the exact position in a few minutes after the completion of the observations, instead of being under the necessity of making long and laborious computations when mentally fatigued, and consequently specially liable to make mistakes, is a great advantage.

In giving examples of the method of preparing programmes and reducing observations, we have assumed that a mean-time chronometer is employed, as this will most usually be the case on geographical and hydrographical explorations. The surveyor who is provided with a sidereal chronometer will readily see how to shorten the computations somewhat.

CHAPTER II.

DESCRIPTION OF THE PRISMATIC ASTROLABE AND ITS ADJUSTMENTS.

Fundamental Principle of the Prismatic Astrolabe.

The principle of spherical astronomy which is made use of in the astrolabe to determine time and latitude—the principle of equal altitudes—may be stated as follows. If any three or more stars, of which the apparent places in the heavens are accurately known, are observed to reach the same altitude at times which are noted, then it is possible from the observed times to calculate (1) the altitude at which the stars were observed; (2) the error of the chronometer used on local mean time; and (3) the latitude of the place of observation. The accuracy of the results will depend largely on the proper selection of stars to be observed.

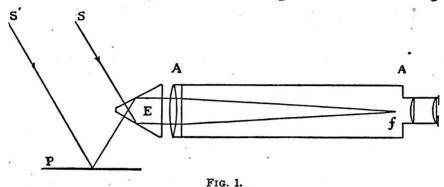
The utilization of this principle of equal altitudes is not, of course, peculiar to the prismatic astrolabe. It can be made use of with a sextant or theodolite clamped at a fixed altitude. It was in fact utilized in sextant observations so long ago as 1808 by the celebrated astronomer Gauss, to whom we owe the first investigations as to the conditions most favourable to an accurate result; * and it has since been very successfully employed with the theodolite in surveys in Egypt and elsewhere.† But the prismatic astrolabe differs from the sextant and theodolite in that it is specially designed for making use of this equal-altitude principle, and for nothing else; and its construction is such as to give it special advantages over any other instrument for this particular purpose.

For reasons which will become apparent on considering the optical arrangements of the instrument, the prismatic astrolabe is designed for observations at only a single fixed altitude of 60°. At this altitude, it may be remarked, the variations in refraction due to changes of temperature and pressure during the observation are very small and usually negligible.

^{*} CHAUVENET, "Spherical and Practical Astronomy." Philadelphia and London, 1891. Vol. 1, p. 280.

[†] Ball, "Modern Methods of Finding the Latitude with a Theodolite," Geographical Journal, xlix (1917), p. 440.

The essential features of the instrument are shown diagrammatically in Fig. 1. An equilateral glass prism, E, is placed in front of the object-glass of a horizontal astronomical telescope, AA, the back of the prism being normal to the optic axis and the edges of



the prism being horizontal. At P is an artificial horizon formed by a horizontal mercury surface. Two parallel rays, SS', from a star, one incident on the prism and the other on the mercury surface, will form a pair of images in the plane of the principal focus, f, of the objective, which images will be coincident at the instant when the star's altitude is exactly 60°, but will be separated as the star's altitude differs from 60°. An observer looking through the telescope at a star which is about to pass the altitude-circle of 60° will see two images, which gradually approach and pass each other; and observation of the time at which the images pass each other will give the instant at which the star attains the altitude of 60°.

It will be perceived that the reason for making the angles of the prism 60° is that the rays from the star, both direct and reflected, enter the prism-faces normally; they are then totally reflected within the prism and ultimately leave the back face of the prism, again normally, to enter the telescope. The equilateral form of prism is the only one by which these conditions can be attained. The prism is the vital feature of the prismatic astrolabe, and the performance of the instrument depends almost entirely on the perfection of its workmanship. The faces must be truly plane, in order to give clear and well-defined images, the edges must be parallel, and the angles must be very nearly 60°. So high is the degree of perfection reached by the maker in the optical workmanship of the prism that he can guarantee the instrument to give altitudes constant to within 0°·1. This does not mean, of course, that the prism-angles are within 0°·1 of 60°, for it can be shown that, provided the faces

are plane, a deviation of 1' from the 60° angle can be permitted without affecting the constancy of altitude by more than $0''\cdot 1$. If the working angle of the prism is very slightly greater or less than 60° , the only effect is that the stars will be always observed at an altitude differing slightly from 60° , the altitude being, in fact, equal to 60° —refraction $\pm 1\cdot 8a$, where a is the departure of the prismangle from 60° ; and it is on the constancy of the altitude, not on its precise value, that the observation depends. In the particular instrument which we have used in our work in Egypt, the prismangle is 60° 0' 8", and the constant altitude is 60° 0' 14" minus the refraction.

It is of course necessary that means should be provided for adjusting the prism into its correct position with regard to the optic axis of the telescope, and that the telescope should be mounted on a vertical axis, with means of rotating it about this axis into the correct azimuth for any star. How the various movements and adjustments have been provided for in the actual working instrument will be evident from the detailed description which follows, and from Fig. 2, which shows the small-size prismatic astrolabe set up on its tripod ready for observation.

Description of the Instrument.

(See Fig. 2.)

Telescope.—The telescope, AA, has an objective twenty-two millimetres (seven-eighths of an inch) in diameter and a magnification of thirty diameters. The focussing is done by means of a screw, C, which moves the eyepiece, E; a small clamping-screw, D, is used to fix the eyepiece when once the focus has been adjusted, thus preventing accidental disturbance of the focus during observation. The telescope with all its attachments is held in a frame which is fixed to the lower part of the instrument by four milled-headed screws, OO, by slackening which it can be detached for packing in its case. The eyepiece, B, can be removed and replaced by the auto-collimator, Z, when adjusting the instrument.

Prism.—The prism, E, measuring thirty millimetres (1.2 inch) along each edge, is held in a frame affixed to the front of the telescope, and is pressed down in position by the spiral spring, F. There are three adjustments to the prism. The first adjustment, accomplished

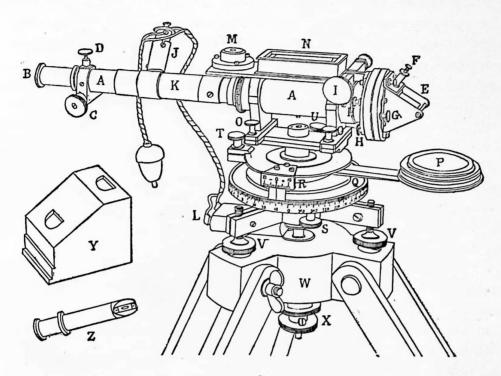


FIG. 2.

- AA Telescope.
 - B Eyepiece.
 - C Focussing screw.
 - D Screw clamping telescope in focus.
 - E Prism in front of object-glass.
 - F Spiral spring holding prism in position.
 - G Collimation-screw for vertical wires.
- HH Two of three collimation-screws U for-horizontal wires. to the VV
 - I Clip screw.
 - J Lamp-holder.
 - K Sleeve of lamp-holder.
 - L Dry battery.
 - M Spirit level.

- N Trough Compass.
- OO Screws clamping telescope-frame to lower part of instrument.
 - P Artificial horizon.
 - Q Lower plate, carrying horizontal circle.
 - R Sector, below which is the fiducial mark of the horizontal circle.
 - S Lower plate clamp.
 - T Sector clamp.
- U Azimuth clamp.
- VV Levelling screws.
- W Tripod.
- X Spring and screw fixing instrument to tripod.
- Y Wind-screen.
- Z Auto-collimator.

by turning the single collimation-screw, G, gives a slight rotatory motion to the prism round a vertical axis, and serves to collimate the vertical wires. The second adjustment, to collimate the horizontal wires, is done by slightly turning one or more of the three screws, H, and has the effect of giving to the prism a slight rotating motion about a horizontal axis perpendicular to the optic axis of the telescope. Both these adjustments are done in conjunction with the auto-collimator before commencing a series of observations. The third adjustment, by turning the clip-screw, I, is usually made at every single observation of a star, with the ordinary eyepiece in place; it gives the prism a rotatory motion round the optic axis, and serves to bring the two images of a star into the same vertical line.

Illuminating Device.—The illuminating apparatus consists of a small 4-volt electric lamp, fixed in a holder, J, and mounted on a sleeve or collar, K, which is capable of sliding along and around the telescope-tube. Current for the lamp is furnished by a small dry battery, L, and the lamp is lighted by pressing the button of a push inserted in the circuit. The sleeve which carries the lamp is placed in one or other of two positions, according as the instrument is being adjusted with the auto-collimator or employed in actual observation of stars. In Fig. 2 it is shown in the position for observation, in which it gives bright wires on a dark ground. space included by the four wires is slightly over a degree square. brightness of the wires can be varied by rotating the sleeve round the optic axis, the illumination being the greater the more the lampholder is moved from the horizontal position. When the instrument is being adjusted by the auto-collimator, the sleeve is moved as far as it will go towards the eyepiece, and the lamp-holder is kept in the horizontal position; this gives a bright field on which the cross-wires are seen as black lines. The auto-collimator gives a much smaller magnification than is obtained with the observing eyepiece.

Level.—A small circular spirit-level, M, serves to level the instrument by adjusting the three levelling-screws, VV. The preliminary levelling of the instrument is not required to be done with any very high degree of precision, and the small circular level is quite sufficient for all the accuracy necessary.

Compass.—A trough compass, N, with a magnetic needle about two inches long, having an arc of vibration of about 20° on either side of the central division, is fixed to the top of the telescope-tube, and serves to orientate the instrument approximately in the true meridian when the magnetic declination is known. The needle is lifted from its pivot when not in use, by moving a catch outside the compass-box at the end nearest to the eyepiece.

Artificial Horizon.—The artificial horizon, P, consists of a very shallow circular dish about two inches in diameter, with a floor of amalgamated copper, on which a thin layer of mercury is poured. It fits by a conical stem into a recess in the arm which carries it, and which is capable of rotation along with the telescope around the vertical axis of the instrument. In the case are provided two boxwood bottles, one containing a supply of clean mercury and the other to contain mercury which has been used, a boxwood funnel, glass tubes, and a piece of chamois leather; these are used for filling the artificial horizon with mercury and for cleaning its surface of dross. For travelling, the mercury-dish fits into a cover, and is provided with a screw-on cap to protect the conical stem; this cap also serves to form a stand for the mercury-dish when detached from the astrolabe.

Lower Plate and Horizontal Circle.—The lower plate, Q, which carries a brass horizontal circle of five inches diameter divided into degrees round its edge, is capable of rotation about the vertical axis, and can be clamped in any position by the lower-plate clamp, S. When the other clamps, T and U, are fixed, and S loosened, the entire instrument can be rotated round the vertical axis; this arrangement is adopted for orientating the instrument in the true meridian at the commencement of observations. During the observations themselves the clamp, S, is kept fixed, and by loosening the azimuth-clamp, U, the telescope with its attachments, and the artificial horizon with it, can be placed in any desired azimuth by means of the horizontal circle.

The Sector.—The sector, R, with a range of 10° graduated on either side of its zero, serves to correct for any error in the preliminary orientation of the instrument, without having recourse to moving the lower plate; it is specially useful when, owing to

local attraction of the compass-needle, the local magnetic declination is very uncertain. By loosening the sector-clamp, T, the position of the fiducial mark by which the horizontal circle is read can be shifted up to 10° either way on the sector, and thus made to correct for any error in the preliminary orientation up to this amount. In a series of observations, of course, the sector-clamp, T, is kept tight, being only loosened if found necessary by the reading of the horizontal circle not agreeing with the calculated azimuth of the first star, and clamped after the error of preliminary orientation has been allowed for on the sector so as to give correct azimuths for all remaining stars of the series.

The Azimuth-clamp.—The azimuth-clamp, U, which is conveniently placed at the observer's left hand, serves to fix the upper part of the instrument at any azimuth indicated on the horizontal circle. It has to be loosened after every star observation, in order to bring the telescope into the correct position for the next star. On the larger instruments this clamp is accompanied by a fine adjustment screw, giving a slow motion in azimuth; but in the smallest size here described the slow motion has to be given by hand with the clamp loosened.

The Tripod.—The tripod, W, is a light but stiffly-built structure of wood, of a suitable height for convenient observation when the observer is seated in an ordinary chair. The framed legs are held to the central block of the stand by thumb-screws, which should be kept tight to avoid shake. The instrument is held down to its tripod by a stiff spiral spring and screw, X.

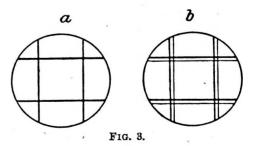
The Wind-screen, Y, is a blackened wood box which can be fitted over the artificial horizon to prevent disturbance of the mercury-surface in a light wind.

The Auto-collimator, shown separately at Z, is a spare eyepiece which is used in place of the ordinary eyepiece for adjusting the prism into its correct position before observations of stars are taken. It consists of a low-power microscope, with a plate of glass inclined at 45° fixed over its objective; this plate acts as a reflector for illuminating the field of view.

Adjustments of the Prismatic Astrolabe.

- 1. To level the instrument.—Having set up the instrument on its tripod as nearly level as possible by eye, turn the telescope till its axis is pointing over one of the levelling-screws and midway between the two others. Then bring the bubble on to the line parallel to the axis of the telescope by turning the two last-named levelling-screws in opposite directions to each other, and finally bring the bubble to the centre by turning the other levelling screw.
- 2. To make the edges of the prism approximately horizontal.— The final adjustment for horizontality of the prism-edges is made separately for each star observed. But it is useful to make an approximate adjustment before commencing observations, because if the adjustment is badly wrong there may be considerable difficulty in finding the two images of a star. To make this approximate adjustment, which is conveniently done in the daytime, proceed as follows. Having levelled the instrument as above, take out the eyepiece altogether, and suspend a plumb-bob by a fine white thread in front of the prism. On looking through the telescope tube, the thread may appear to be broken at the prism edge, showing that the prism is not horizontal; the adjustment is made by turning the clip-screw, I, until the thread appears continuous.
- 3. To make the back face of the prism normal to the optic axis of the telescope.—This is done by means of the auto-collimator, using the electric illumination of the field, and is conveniently done in the dark just before observing; if carried out in daylight it is

best to throw a dark cloth over the prism to prevent extraneous light entering the telescope. Remove the ordinary eyepiece and insert the auto-collimator. Slide the sleeve of the lamp-holder as far as it will go towards the eyepiece-end of the telescopetube, and rotate it so as to bring



the lamp-holder into the horizontal position. Then, pressing the push to illuminate the field, look through the auto-collimator and focus on to the cross-wires. If the adjustment is already correct,

a single set of four dark wires will be seen crossing the field, as at α in Fig. 3. But if not, a second series of four wires, parallel to, and slightly fainter than, the first will also appear by reflection from the prism face, as at b in Fig. 3. The adjustment in this latter case is to be done in two stages. First, by turning the single screw, G, on the front of the prism-mounting, bring the two sets of images of the vertical wires into exact coincidence. Then, by means of the three screws, H, on the back of the prism-mounting, bring the two sets of horizontal wires into exact coincidence. This last operation is more difficult to do than the other, partly because the screws are rather difficult to get at with the fingers, and partly because of three screws having to be dealt with instead of one. But when the adjustment has been very nearly made, it can be completed by a very slight tightening or loosening of the lowest screw of the three, which is the one most easily accessible; and once made, the adjustment does not readily get out of order. The complete coincidence of the direct and reflected images of the graticule shows of course that the back face of the prism is normal to the optic axis.

4. To orientate the instrument so that true azimuths are indicated by the readings of the horizontal circle.—This is very easily done by the compass if the local magnetic declination is known. Suppose the compass-declination is known to be 5° West. Having levelled the instrument, clamp the sector with its zero in coincidence with the fiducial mark of the horizontal circle, and bring the fiducial mark itself to 355° (which is the true bearing of the magnetic north point) on the horizontal circle, clamping it there by the azimuth-clamp, U. Then, loosening the needle of the compass and the lower-plate clamps, rotate the entire instrument round the vertical axis till the needle points to its zero division, and tighten the lower-plate clamp. The instrument is now correctly orientated.

If there has been an error in the assumed compass-declination, or if there is some local attraction of the needle, the orientation will of course be incorrect by the amount of the error or local attraction, and this will be at once perceived by the first star not appearing at its tabulated azimuth. If, for instance, the true local variation was really 7° instead of the assumed 5°, the azimuth of the star will appear 2° too great on the circle. This can be allowed for by slackening the sector-clamp, T, and moving the sector till the fiducial mark points to—2° on the sector, after which adjustment all sub-

sequently-observed stars will be found at their tabulated azimuths as read on the horizontal circle.

The above four adjustments are all that are required to be made before observing with the instrument. There are a few minor adjustments necessary during the actual progress of a set of observations, but these latter will be referred to in the chapter on instructions for observing.

Ball and Knox-Shaw.—A Handbook of the Prismatic Astrolabe.

CORRIGENDA.

- p. 10, line 12 from bottom, for E, read B.
- ,, 11, lines 6 and 7 from bottom, substitute

HH, Two of three screws fixing prismmounting to telescope.

- p. 12, lines 4 and 5 from top, for one or more of the three screws H, read one of two other screws.
- ,, 16, lines 5 to 18 from top, for First axis, substitute the following:—

First, by means of a small screw-driver, turn gently one or other of the two screws with nicked heads (not shown in Fig. 2) which will be found situated one above the other in front of the prism-mounting on the opposite side of the prism to the vertical collimation-screw G, until the two images of the horizontal wires are exactly coincident. Then secondly, turn the screw G with the thumb and finger until the direct and reflected images of the vertical wires are likewise exactly coincident with each other. The complete coincidence of the direct and reflected images of the graticule shows, of course, that the back face of the prism is truly normal to the optic axis of the telescope. It is the latter part of the adjustment (that for coincidence of the images of the vertical wires) which is the more important of the two stages, and it should be carefully attended to before the commencement of every set of observations.

- p. 39, line 2 from top, for assumed latitude read assumed altitude.
- p. 282, the R.A. of ζ Pegasi should be 22 37.

CHAPTER III.

PREPARATION OF PROGRAMMES FOR OBSERVATION.

To prepare a programme for observation at any place,—

- 1. Decide on a convenient local mean time for the observations.
- 2. Convert this into local sidereal time.
- 3. From the star-tables, look out what stars are observable in each of the four quadrants in the particular latitude at about the given sidereal time, and make a list of their sidereal times of passage and their azimuths, interpolating between two tabular latitudes if necessary.
- 4. Convert the sidereal times into chronometer-times, assuming an approximate chronometer-error.
- 5. Arrange the stars in the order of their chronometer-times, noting their magnitudes and azimuths.

As an example, let it be required to prepare a programme for astrolabe-observations at Berbera, British Somaliland (lat. 10° 25′ N., long. 44° 59′ E.) for April 5, 1918, between 10 p.m. and 1 a.m., the chronometer being approximately 25 m. slow on local mean time.

			h.	m.
Sidereal	\mathbf{time}	at local mean noon	0	51
"	,,	at 10 p.m., approximately	10	53
,,	,,	at 1 a.m., approximately	13	53

We have therefore to find from the star-tables what stars make their passage in the different quadrants between the local sidereal times 10 h. 53 m. and 13 h. 53 m. in latitude 10° 25′ N. This is easily done by taking out from the tables the corresponding stars

in latitudes 10° and 11°	N., and	interpolating	for	latitude	10°	25'	N.,
as shown below:		35					

1			Lat. 10	° N.	Lat. 11	° N.	Lat. 10° 25′ N.		
Quadrant.	Star.	Mag.	L.S.T.	Az.	L.S.T.	Az.	L.S.T.	Az.	
			h. m.		h. m.	•	h. m.	•	
NE.	η Boötis ρ Boötis ε Boötis α Cor. Bor. δ Bootis	2·8 3·8 2·7 2·3 3·5	11 53 12 54 12 57 13 46 13 50	70 43 51 52 35	11 51 12 50 12 54 13 43 13 45	71 45 53 54 38	11 52 12 52 12 56 13 45 13 48	70 44 52 53 36	
SE.	γ Corvi δ Corvi α Virginis β Libræ α Libræ	2·8 3·1 1·2 2·7 2·9	11 19 11 25 11 54 13 40 13 43	154 150 133 129 149		154 135 131 152	11 28 11 56 13 41 13 46	152 134 130 150	
sw. {	α Hydræ ν Hydræ δ Crateris γ Corvi δ Corvi	2·2 3·3 3·8 2·8 3·1	11 0 11 48 12 26 13 5 13 27	233 211 216 206 210	10 56 11 40 12 20 — 13 19	231 207 213 — 206	10 58 11 45 12 23 — 13 24	232 209 215 — 208	
NW. {	ε Leonis δ Leonis	3·1 2·6	11 32 13 7	301 295	11 35 13 8	300 293	11 33 13 7	301 294	

Our list gives us a redundancy of stars, and as we only require two stars in each quadrant, we may cut out three of the stars in the first quadrant and two in each of the second and third. To decide on which stars to cut out, we have to remember that the programme-times are only approximate, and it is consequently best to allow at least five minutes of interval between successive programme-times, in order to make sure of having time to swing round from one star to another. We may at once cut out a Coronæ Borealis and a Librae, because their times are so close to that of δ Boötis; and we may cut out also a Hydræ as being the earliest of all the stars, since by doing so we shorten the total time of observation by nearly half an hour. We reject η Boötis, ϱ Boötis, and δ Crateris from our programme, the first because it is outside

our normal limits of azimuth, and the other two because they are fainter stars than the others. We might also cut out δ Corvi in the SE. quadrant and thereby still further reduce the time over which the observations extend, but it will be preferable to leave it in, to serve as a trial star on which to make sure that all the instrumental adjustments are satisfactory.

We have now to convert the sidereal times of passage of the stars we have selected into the equivalent chronometer-times. The middle sidereal time of all the observations is about 12 h. 30 m.; and the chronometer-time corresponding to this is 11 h. 12 m.; that is to say, the chronometer is roughly 1 h. 18 m. slow on local sidereal time, and consequently by subtracting 1 h. 18 m. from the sidereal times of passage of the stars we obtain the approximate chronometer-times.

Our final programme, therefore, is:-

St	nr.	ı		Mag.	Approx. Chr. Time.		Azimuth.	Remarks.		
					h.	m.	•			
δ Corvi	•••	•••		3.1	10	10	152	Trial star.		
ε Leonis	•••	•••		3.1	10	15	301	NW. Quadrant.		
ν Hydræ		•••		$3 \cdot 3$	10	27	209	SW. "		
α Virginis	•••	•••		1.2	10	38	134	SE. "		
ε Boötis	•••	•••		2.7	11	3 8	52	NE. "		
δ Leonis	•••	•••		2.6	11	49	294	NW. "		
δ Corvi	•••	•••		3.1	12	6	208	SW. "		
β Libræ	•••	•••		2.7	12	23	130	SE. "		
δ Boötis	•••	•••	•••	3.5	12	30	36	NE. "		

It will not always be possible to find a sufficiency of stars in the tables for a satisfactory programme to be made out for any particular period of time at which it may be desired to observe, because of the comparatively small number of bright stars which reach 60° of altitude during the night in certain latitudes, and the irregularity of the intervals at which the stars occur. But it will easily be seen from the tables at what sidereal time it is practicable to observe a sufficiency of stars within a limited period of observation, and it will usually be possible to arrange for the observations to be taken at the particular time of night when stars are sufficiently numerous for a good result.

The general aim should be to form a programme which, without extending over more than about two hours of observation, includes two stars in each of the four quadrants, and if possible an additional preliminary bright star in one of the quadrants to serve as a trial-star. This allows for a good determination, even should one or two of the stars be missed for any reason. But four stars in different quadrants will yield quite satisfactory results if they are all properly observed, and even with this number a good check on the work is obtained. With three stars in different quadrants the results may also be quite good, but in this case there is no check possible unless the angle of the prism and the refraction are accurately known.

When only a single night is available for observation at any place and there is fear of the sky becoming clouded over, it is generally best to prepare a rather long programme, lasting, it may be, over five or six hours, and to commence observing as early as possible. If all goes well, the observations can be stopped when two stars have been observed in each quadrant; while if the observations are interrupted by clouds it may still be possible to secure, say, one star in each of the four quadrants within a period short enough to avoid sensible change in the refraction. Where the observations have perforce to extend over a long time, the readings of the thermometer and barometer will of course be noted at each observation; and if on reference to the refraction-tables on page 278 it is found that the change of refraction is sufficiently sensible, it can be easily allowed for in reducing the observations (see p. 42).

CHAPTER IV.

INSTRUCTIONS FOR OBSERVING.

In selecting the spot for observation, preference should be given wherever possible to a position in which the instrument is screened from wind, as in the lee of a building or hill. As the part of the heavens which it is necessary to see does not extend below an altitude of 60°, it is usually possible to secure a fairly good screen without interfering with the field of view of the instrument. Care should of course be taken that the building or other structure used as a screen is not of such a nature, or in such close proximity, as to introduce unsymmetrical refraction, as for example might be the case with a hot boiler-house. If it is necessary to take observations at a time when a breeze may be expected, and there is no natural shelter available for the instrument, it may sometimes be practicable to rig up a shelter from four poles and a piece of sail-cloth; such a shelter may of course be carried up higher than the instrument itself without obstructing the view of stars. But improvised shelters of this kind if erected on sandy or dusty ground, frequently give rise to a great deal of dust, owing to the continual flapping of the lower edges of the cloth; and unless well closed at the bottom they may in this way cause the mercury-surface to be rapidly covered with fine dust, which vitiates the reflecting-power.

The astrolabe should if possible be set up some half an hour before the actual observations are timed to commence, and care should be taken that it is so set up as to be at the most comfortable, height for the observer; the accuracy with which the star-passages can be noted depends to a large extent on the comfort of the observer, and he should so arrange the height of the instrument that he can look through the telescope without straining his back or neck. The observer should be provided with two or three electric torches or flash lamps. No one who has used these for night observing work would ever go back to the old system of oil or candle lantern, and in working with the astrolabe, where at the moment of observation it is essential that all should be in darkness, the facility with which an electric torch or lamp can be extinguished is an added advantage. It is always best to have one or two spare torches or lamps ready,

because the dry batteries by which they are actuated are liable to give out rather suddenly, and it is maddening to have an observation spoiled by a failure of this kind.

Assuming the edges of the prism to have been already adjusted in daylight to nearly the horizontal position, as described under adjustment 2 on page 15, and the instrument to have been set up at the selected spot and levelled by adjustment 1, page 15, the first step should be to place the zero of the horizontal circle in the azimuth of the true north, by the process described under adjustment 4 on page 16.

Next, the perpendicularity of the back of the prism to the optic axis of the telescope should be tested with the auto-collimator (the sleeve of the lamp-holder being retracted into the collimation-position), and any necessary adjustments made by the collimation screws, as described under adjustment 3 on page 15.

The auto-collimator is then removed; the sleeve of the lampholder having been moved forwards into the observing position, the ordinary eyepiece is inserted and the telescope focussed on the illuminated wires. The sleeve of the lamp-holder should be rotated into such a position that the wires are sufficiently bright for the observer to see them clearly, without being so bright as to interfere with the clear seeing of the star-images. The angle at which the lamp-holder will give the most suitable degree of illumination will depend largely on the state of the dry battery used. With a new battery the position may be nearly horizontal; but as the battery runs down, the inclination has to be increased in order to get enough light on the wires. To some extent the degree of illumination required will depend on the taste of the observer; but with fairly bright stars it is better to have the wires rather too bright than too faint, for the visibility of the wires is the criterion that the observer is looking along the optic axis of the telescope, and on coming from the light round the chronometer after booking an observation it may be found difficult to see very faintly-illuminated wires at the first glance, even if the eye is directed along the correct line.

The next step is to prepare the artificial horizon, and a good deal of the success or otherwise of the observations will depend on the correct amount of mercury being used and on the cleanliness with which its surface is maintained. It is essential for the proper performance of the horizon that the mercury should wet the entire surface of the amalgamated copper plate which forms the floor of

the basin, and this condition will not be fulfilled unless the amalgamated copper plate is kept free from all traces of grease. Even a touch with the fingers is sufficient to impart enough greasy matter to the plate to prevent uniform wetting of its surface by the mercury. If the instrument has not been used for some time there may be on the surface of the plate a hard layer of amalgam which will not unite easily with the newly poured-on mercury; and this by interfering with the free motion of the mercury may be sufficient to prevent the mercury-surface from being truly horizontal. therefore important before commencing a set of observations to verify that the copper plate is everywhere cleanly covered with a fluid amalgam. If it is found that the mercury does not everywhere wet the plate, or does not roll freely over its surface, the mercury should be poured off and the plate should be cleaned by pouring on it a few drops of dilute nitric acid; this will attack the copper and ensure the proper condition of amalgamation of the plate in a few seconds, when the acid should be washed off with water, leaving the plate ready to receive a fresh layer of mercury. The mercury is conveniently poured on to the amalgamated copper plate with the aid of the wooden funnel, the horizon being in its place on the instrument while the operation of adding the mercury and cleaning its surface is done. A little experience is the best guide as to the quantity of mercury to be used. If too much is present, the surface will form a meniscus instead of being flat, and the definition of the image will suffer, while there will be an added sensitiveness to disturbance of the surface by wind. If there is too little mercury, on the other hand, there will be such viscosity of the thin layer that the surface will not at once take up a truly horizontal position when the levelling-screws of the instrument are adjusted, and the accuracy of the observations will be impaired; this condition is readily detected by the reflected image not promptly responding to a movement of the levelling screw. The quantity of mercury should be sufficient for the surface to maintain a horizontal position when the instrument is slightly out of level, and at the same time not so great that a marked meniscus is formed, nor so great that the horizon is very sensitive to disturbance by air-currents. It will be found that the quantity is about right when the glass cleaning-tube just grazes the mercurysurface when it is rolled along resting horizontally on the rim of the shallow dish which holds the amalgamated copper plate. To clean the mercury-surface, the glass tube provided with the instrument

is wiped clean with the chamois leather and then passed with a rotating motion over the mercury, the tube being turned in the opposite sense to that in which it would naturally roll. All the dross on the surface of the mercury adheres to the glass tube, and can be wiped off. Two or three passages of the tube are sometimes required to obtain a perfectly clean surface.

The wind-screen should now be placed in position over the artificial horizon, care being taken that it is free from dust inside, which would drop on the mercury surface. The wind-screen should be put in place, even if the air is quite calm at the commencement of the observations; for there is no certainty that a breeze may not spring up during the course of the work, and a set of observations might easily be spoiled by this occurring when there was no time to put the screen in place.

All is now ready for commencing observations, and the fiducial mark of the horizontal circle should be set to the azimuth shown for the first star on the programme. Since the diameter of the field of view of the telescope is nearly a degree and a half, the star-images will usually enter the field (at the top and bottom) about three to four minutes before they pass each other. About four minutes before the time marked on the programme, therefore, a look-out should be made for the star-images. As the computed azimuth may only be correct to a degree or so, the azimuth-clamp should be loosened and the telescope gently moved a little to and fro in azimuth till an image is seen entering the field. The absence of a fine adjustment-screw for this purpose in the small instruments is at first somewhat embarrassing, but after a little practice it is easy to secure a smooth slow motion by grasping the clamp between the thumb and finger, these at the same time resting lightly on the top of the lower plate, when a slight turning of the wrist will be found to give the desired steadiness of motion.

If the instrument is in perfect adjustment in every respect, the two images will enter the field at the same moment, one vertically over the other, and will remain vertically over each other as they approach, though moving slowly in azimuth; in this case nothing remains to be done except to move the telescope very slightly, following the images in azimuth so that their passage shall take place near the centre of the square formed by the illuminated wires, and to note the time of passage. The adjustment must be complete about fifteen seconds or so before the actual passage takes place,

so that the mercury horizon is perfectly steady at the critical moment. The movement in azimuth should be made so that the passage is made to occur as near as possible to the imaginary vertical line which bisects the square; it is more important that this should be attended to than that the passage should take place near the centre of the field. For it can be shown that if the horizontal edge of the prism is within 2'.5 of perpendicularity to the optic axis of the telescope (a condition easily fulfilled in practice, owing to the perfection of the prism and the ease with which the collimation-adjustment can be made), then the altitude of observation will be constant within 0".1 if the star-passages are all observed within a vertical band 5' in width down the centre of the square; or within 1" if they are all observed within a vertical band 15' broad. But even if the adjustment of the prism is imperfect, the constancy of altitude, which is the vital thing to be aimed at, will still be maintained, if all the star-passages are made to take place at the same point of the field. With a little practice it is easy to ensure that the passages are all observed very close to the centre of the square, and when this is done the effects of any small imperfections of the prism or errors in the adjustment for collimation are negligible in the result.

In general only one of the star-images will at first be seen, the other being out of the field. A search must therefore be made for the other image. If the image first seen enters at the top of the field, the other, the one sought, is possibly vertically below it though out of the field, but it will most likely be a little to one side of the image first seen. By moving the telescope gently to and fro in azimuth, care being taken not to shake the mercury horizon, the other image will be found, and the clip-screw should be turned so as to make the two images approach each other laterally till they are in the same vertical line, the telescope being then moved if necessary to bring the imaginary vertical line joining the two images to near the centre of the field. If now the two images are not about equally above and below the centre of the field, one of the levelling screws, preferably that most nearly under the optic axis of the telescope, should be adjusted so as to bring the point of passage near the centre of the square. All this can usually be done in the two or three minutes between the time of first sighting one of the images of the star and the time of passage. But sometimes, if the preliminary adjustment of the clip-screw has not been very exact, it may take longer; and hence it is a good plan to have in the programme an extra star for

the purpose of adjustment, preferably a bright star which crosses the 60° altitude some minutes before the commencement of the actual programme. If this is done, it will not matter if the clipscrew adjustment cannot be completed till just after the images have passed each other.

Once the clip-screw has been adjusted nearly correctly for the first or trial star, it will not give much trouble for subsequent stars, as only a slight further motion will be necessary in subsequent observations. The best rule to observe with the second and following stars is to look out well in time round about the proper azimuth, and as soon as one image is seen, clamp the horizontal circle; then, if the image seen is high up in the field, turn one of the levelling screws so as to bring it still higher, and vice versa. This will generally bring the other image into the field, and the final adjustments, of the clip-screw for verticality of images, and of levelling-screw and azimuthal motion for centrality of the point of passage, can be very quickly accomplished.

It is best not to make the images go right over each other, but only to make them pass very closely; and the instant of passage is the instant when the two images are apparently in the same horizontal line. Also it is far preferable to allow the passage to take place some distance from the centre of the square (so long as it is somewhere within it) rather than to attempt final adjustments too near to the time of passage. For at least fifteen seconds before the passage the adjustments should be left absolutely untouched, in order that the mercury of the horizon may be quite steady, and that a good clear reflected image may be seen. A little practice with the instrument will enable this condition to be fulfilled, as well as that of approximate centrality in the field, at every observation.

When the mercury is clean and still, the direct and reflected images are practically of equal brightness and definition; but tremors of the mercury due to movement of any kind will blur the reflected image, while the effect of wind may be to cause such intense blurring that the reflected image looks more like a nebula than a star, and of course no accurate observation can then be made.

To decide which is the direct image, and which the reflected one, when both are equally bright and clearly defined, it is useful to remember that the direct image appears to move in altitude in the opposite direction to the actual motion of the star, *i.e.*, if the star is rising, the direct image of the star will appear to be descending.

while the reverse is the case with the reflected image. In azimuth, both images appear to move in the same direction as the star, i.e., if the star is really moving to the observer's right, both the images will appear to do the same. As a matter of fact, however, it practically never matters to the observer which image is which. The instrument has to be very badly out of level indeed to invalidate the rule, that to find the second image when the first has been seen, if the first-seen image is low, it must be lowered still more to find the other; if high, it must be raised still higher; in both cases, of course, the lowering or raising is done by means of one of the levelling screws; and a little horizontal sweeping will do the rest, if only the clip-screw adjustment is reasonably nearly correct. And when once the two images can be seen in the field, all the rest is easy.

It is a good plan, whenever there is a comparatively long wait between successive star-observations, to check the adjustment of the prism by the auto-collimator, and to clean up the mercury of the horizon if necessary. The adjustment of the prism will seldom need any modification; but if the night is rather windy and there is dust about, the artificial horizon may gather enough dust in half an hour to make it well worth while to clean it, for the wind-screen acts as a sort of dust-trap.

The best manner of taking the times of the star-passages will depend on the nature of the time-pieces available, and on whether or not the observer is accompanied by a skilled assistant, as well as to some extent on the previous practice and preference of the observer.

The method which we ourselves have found most satisfatory is to make use of a Dent "time-of-flight" stop-watch, which records hundredths of seconds. The watch is started at the instant of star-passage and stopped on a beat of the chronometer; the time of passage is then the recorded chronometer-time minus the interval shown on the watch. This method can be employed without an assistant. Its chief objection is the great expense of the "time-of-flight" watch. But probably a good ordinary stop-watch marking fifths of seconds would serve in the same way with sufficient accuracy for ordinary surveys; for if, say, eight stars were observed and the times correctly recorded to fifths of seconds, the final result might reasonably be expected to be within a tenth of a second of the truth. With any form of stop-watch the observer should stop the watch on the chronometer-beat by sight, not by sound; for then the personal

reaction-time of the observer should be entirely eliminated. The great advantage of using some form of stop-watch for recording the time is that it leaves the observer's mind free to concentrate itself on the observation of the star-passages, unburdened by any necessity for counting the beats of the chronometer, and in this way conduces to more precise observation of the instant of passage.

If no stop-watch is available, the observer may himself record the time. The chronometer is conveniently placed a few yards from the instrument, so that its beats can be heard. About twenty seconds before the passage is expected to take place, the observer glances at the chronometer and "carries the beat" till passage occurs, estimating the nearest tenth of a second. This method gives good results with a practised observer, but involves a much greater strain than the use of a stop-watch.

To avoid the strain of "carrying the beat" when no stop-watch is available, an assistant may be made use of to record the chronometer-time, the observer calling out "tip" at the instant of passage. Needless to say, the assistant should be previously practised at the work.

In hydrographic surveys it may be preferred not to risk the carrying of one of the ship's chronometers ashore, but to employ a good hack watch; and in most exploratory land-surveys * a chronometer is so difficult to transport safely that a good lever watch, either an English half-chronometer or a first-class Swiss lever,† will be found more convenient. The watch should have a good clear seconds dial, with a fine black second-hand moving close to

^{*} We are here referring to surveys where the chronometer would have to be transported by hand or on pack animals, under which conditions, apart from the risk of a fall, it would be very liable to be stopped by a sudden twist. But where motor-car transport can be used, it is quite safe to take a box chronometer, as we have found on recent military surveys. We have carried box chronometers for thousands of miles over rough desert in motor-cars, and in spite of the jolting they get they have not only been transported safely, but have maintained a constant rate within a few tenths of a second per day. The best place to carry a chronometer in a car is between the observer's legs, the box being placed on a folded blanket resting on the floor of the car. When the car jolts very badly, of course the chronometer is jerked vertically upwards, but it can be prevented from falling violently by gripping it between the legs; and provided it does not get too violent a shock, bumping up and down does not seem to aftect the rate. The main thing to be careful about is not to twist the chronometer suddenly when putting it in or taking it out of the car.

[†] E.g. Zenith, Tavannes, or Longines. These are all high-class machine-made lever watches which have given good results under test, and they are much cheaper than a first-class English lever.

the dial to avoid error of parallax. Where a watch is used, the method we prefer is to hold the watch to the ear while observing, and commence to count the ticks aloud at the instant of passage. As soon as the assistant hears the observer begin to count, and sees him take the watch from his ear, he flashes the light of a portable electric lamp, held in readiness, on to the dial, and the observer notes how many ticks he has counted when the second-hand of the watch reaches a five-second division. The reading of the watch being noted, and the number of ticks, the instant of passage is the watch-reading minus the interval corresponding to the ticks. Half-chronometers generally make four and a half, Swiss lever watches five, ticks per second. By this process the time of each observation can be correctly recorded to about a fifth of a second, and the final result from eight stars should be well within a tenth of a second of accuracy. But so much depends on the particular watches available and on the experience of the observer and his assistant, if any, that practice on different expeditions will vary a good deal; the great thing to bear in mind is that the instant of star-passage is so sharply marked in the astrolabe, owing to the high magnification of the telescope and the double relative velocity of the images, that the precision of observation is usually ahead of the precision of time-recording, and consequently every effort should be made, by eliminating personal equation as far as possible, and by avoiding loss of accuracy by comparison or otherwise, to secure that the recording is as exact as it can be made with the time-keepers available.

As a general rule on hydrographic surveys, and to a smaller extent on exploratory surveys, it will be possible to obtain Greenwich or other standard time by wireless signals. The development of wireless telegraphy, by eliminating the necessity of trusting to chronometer-rates over long periods, or to lunar observations for the deduction of longitude, has made it well worth while to strive after the greatest possible precision in determining local time. In former days it was often not worth while to be sure of the local time to within a second for longitude, because the chronometer could not be trusted to give the Greenwich time with that degree of accuracy at any great distance from the nearest telegraph office; but nowadays quite a small portable wireless receiving outfit enables Greenwich time to be picked up within a tenth of a second even in regions remote from civilisation, and in consequence one must strive after tenths of seconds in the precision of local time-determinations in order

to make full geographical use of the facilities thus afforded. in all cases where wireless is used to determine standard time in conjunction with the astrolabe for longitude, it is more important than ever to avoid as far as possible, not only the small errors inseparable from numerous comparisons, but also those due to personal equation. In geographical surveys with a portable wireless set, for instance, if a chronometer is used it should be so placed that it can be used to record the star-observations and the wireless signals without its position being changed; and if the times of star-passages are booked by the recorder from the observer's calling out "tip" at each passage, the wireless signals should be received and booked by the same recorder, and not by the observer. In this way the personal equation of the booker (his reaction-time to sound) is eliminated; there will still remain, of course, the personal equation of the observer, but even this may be allowed for by conducting a blank experiment in a place of known longitude. In hydrographic surveys the wireless receiver will almost always be aboard ship, while the astrolabe observations can only be made ashore; and in this case, if the distance to be covered by boat is not too great, nor the sea too rough, it will probably generally be best to carry one of the ship's chronometers ashore for the observations, and to take the wireless signals on the same chronometer on its return to the ship. The chronometer used for the observations will of course be compared before and after the observations with any other chronometers which remain on the ship, and thence an estimate of the constancy of the rate of the moved chronometer, and the reliability of the resulting longitude, can be obtained. An ideal arrangement is to have several mean-time chronometers kept on the ship, and a sidereal chronometer carried to and from the shore for the star observations. For besides the shortening of the calculations by the use of a sidereal chronometer, there is the added advantage that far greater precision of comparison can be made between a sidereal chronometer and a mean-time one than between two meantime chronometers, by making use of the method of coincidence of beats. If the journey ashore is long and rough, the usual practice with a hack-watch must of course be followed; but the precision of the astrolabe observations, and the ease with which standard time can be received by wireless on the ship, warrants even more than usual care in the comparison and transport of the watch, as well as in the taking of the times of observation.

The thermometer and barometer should be read at the beginning and end of a series of observations, or better still, if there is a long wait between stars, at every observation. This will permit of an allowance being made for any sensible change of refraction between the different observations.

A few final hints may be given for the encouragement of inexperienced observers with the astrolabe. It is seldom that an observer feels absolutely satisfied that he has recorded the precise instant of passage, even after a good deal of practice. But the speed of separation of the images is usually so rapid, and the concentration of the observer so intense, that what he thinks may be quite a fairly large error turns out in nine cases out of ten to be only of the order of a tenth of a second. Even the inventors of the instrument comparatively seldom feel absolute satisfaction with an observation. Another hint is to set up the instrument in good time and to make oneself perfectly comfortable in observing, as this greatly conduces to accuracy of time-taking, by aiding one in keeping calm at the critical moment. If the observer is in a strained position, it may happen that over-concentration with the fainter stars may lead, by a curious physiological action, to the apparent entire disappearance of both star-images at the moment of passage, and the observation may be missed. Should this happen, or should from any other accidental cause one star of a set be missed, it is important to avoid useless worrying and regret over the contretemps; for after all, the missing of one star, out of a set of say eight, will not lead to a very serious loss of accuracy if the others are properly taken; while if the observer allows his mind to be disturbed by a single failure, he is liable to miss or imperfectly observe the whole remainder of the set.

CHAPTER V.

INSTRUCTIONS FOR COMPUTATION.

The data required for the computation are:-

- (1) The chronometer-times of passage of the stars observed.
- (2) The approximate latitude of the place of observation.
- (3) The approximate constant altitude at which the stars were observed.

It will be remarked that the data do not include the chronometererror; and in fact, although it is convenient to know within a few minutes how much the chronometer was fast or slow on local time for the purpose of preparing the programme of observation, the chronometer-error is not required to be known, even approximately, before commencing the computation. This forms one of the advantages of the special method of computation which we have devised.

As regards the approximate latitude of the place of observation, this should be known to within about 1' of the truth before proceeding with the final calculations. As a general rule, the observer will know his latitude well within this degree of approximation, either from his dead-reckoning or by a rough preliminary meridian-observation of the sun, or by observation of the altitude of a star near the meridian with a sextant or theodolite. But in cases where not even the approximate latitude is known, it can be found within 1' by first merely guessing a value for it, and making a preliminary computation from a few of the stars observed with the astrolabe, thus employing the guessed latitude to find a closely approximate one. Such a preliminary computation will present no difficulty to anyone who has mastered the process of the final computation.

The constant altitude at which stars are observed with the astrolabe will always be very nearly 60° less the refraction, or about 59° 59′ 30″, and in general it will always be quite sufficient to adopt this value in the computation.*

^{*} The true altitude depends, of course, on the angle of the prism of the particular astrolabe used. If the prism-angle is known to differ by more than 10" from 60° it may perhaps be advisable to employ a slightly different value in the computation. An uncertainty of even 20" in the angle of the prism will not, however, sensibly affect the accuracy of the result when three or more stars are observed.

We shall first describe in detail the method of computation for a case in which four stars have been observed, one in each quadrant, as this is the most typical case in practice. Where more than four stars have been observed, the process is exactly similar. We shall afterwards consider cases where only three, or even two, stars have been observed, and shall indicate the special precautions necessary to obtain the most accurate results in these exceptional cases.

Computation of Latitude and Chronometer-error from astrolabe-observations of four stars, one in each Quadrant.

In order to render our description of the method of computation as clear as possible, it will be convenient to make continual reference to an actual example, and for this purpose we shall take the following observations* made with the astrolabe at Helwân (approx. lat. 29° 51′, approx. long. 2 h. 5 m. E.), on March 22, 1918. A mean-time chronometer marking approximately Greenwich Mean Time was employed.

Star.	Chron. Time.	Quadrant.
α Orionis	h. m. s. 5 12 3:5	sw
θ Ursæ majoris	5 34 8.5	NE
β Aurigæ	6 2 20.5	NW
α Leonis	6 15 7.8	SE

The complete working-out of this set of observations is given on pages 40 and 41.

The first step (see the worked-out example on p. 40) should be to divide the paper into four columns, one for each star observed. Columns about four inches wide will give ample room for the work, and are convenient as being each half the width of a foolscap page, so that all the four columns are presented at one opening of a foolscap-sized book. Head each column with the name of the star and the quadrant in which it was observed; and write down in the column the R.A. and declination of the star as taken from the Almanac.

^{*} This set of observations was taken under rather unfavourable conditions, several of the stars in the original programme having to be missed owing to clouds, while in the cases of the stars observed the reflected images were a little unsteady owing to a light wind blowing at the time. We have purposely chosen observations taken under conditions not more favourable to accuracy than are usually encountered in field-work, in order to make our example as practical as possible.

Then proceed in each column to calculate the local time at which each star was observed, assuming the latitude φ and altitude h to be known, by the ordinary process for finding the time from a single observed altitude, using the well-known formulæ

$$\sin^2 \frac{1}{2} t = \sec \varphi \csc p \cos \frac{1}{2} (h + \varphi + p) \sin \left(\frac{h + \varphi + p}{2} - h\right)$$
Local sidereal time (L.S.T.) = star's R.A. $\pm t$

where p is the star's polar-distance and t its hour-angle. Six-place or seven-place logarithms should be used. In ordinary practice, where the latitude is only required to within about $0^{\prime\prime}$. 5, and the chronometer-error to within about 0.1s., we may disregard fractions of seconds in the angles, taking out the logarithmic functions for the nearest second, as has been done in the example given; this facilitates the calculation considerably when tables such as those of Bagay or Shortrede, which give the logarithms of the functions to single seconds, are employed. In the reduction of arc to time, Table III on page 279 will be found convenient. The example on page 40 indicates the most suitable way of arranging the calculation.

Further down in the column, compute by four-place logarithms the azimuth of each star, using the formula

$$\sin A = \cos \delta \sin t \sec h$$

where A is the azimuth measured east or west from north or south, and δ the declination of the star. As the azimuth is only required for plotting a diagram, there is no advantage in computing it to a high degree of accuracy; if obtained correct to 1', it is already several times more precise than can be plotted.

It will be perceived that the result of our calculation is to give more precisely the local sidereal times and azimuths, the approximate values of which will already have been taken from the star-tables in preparing the programme; it is therefore well at this stage to compare the calculated values with the approximate ones, in order to verify that no gross mistake has occurred.

Thus far, all the computation can be just as well done before the observations themselves are made as afterwards; for the observed data have so far not entered into the calculations.

We now come to the manner of dealing with the observations themselves. Assuming the foregoing calculations to have been made, we have only to do a little simple arithmetic and to plot a simple geometric diagram to obtain the latitude and chronometer-error.

The preceding computations have given us the calculated local times of passage of each of the four stars, assuming the latitude and altitude to be known. We will call these the calculated times, and the times actually noted on the chronometer the observed times. We subtract the observed times from the calculated times, being careful to attend to the signs of the four differences. If the chronometer indicates very nearly correct local times, the signs of the differences may not be all the same; but as a general rule the chronometer will be sufficiently fast or slow on the local time to cause all the differences to be of one sign, the sign being—if the chronometer is fast, + if it is slow. Thus, in the example on page 40, the four differences are all +, their values being respectively—

from which it is obvious that the chronometer is somewhere about 2 h. 5 m. 50 s. slow on local mean time.

At this stage we must make an assumption of the chronometererror, which we can do pretty closely, having the four differences as approximate values to guide us. It is quite immaterial what assumption we make, except for the convenience of subsequently making our diagram of a reasonable size; the best way will usually be to assume a value slightly smaller than the smallest of the four differences. Thus in our example we assume the chronometer to be 2 h. 5 m. 50 s. slow on local time, and subtracting this assumed value from the four differences, we get as our reduced differences—

$$+ 1.3 \text{ s.} + 9.4 \text{ s.} + 5.5 \text{ s.} + 3.7 \text{ s.}$$

Converting these reduced differences from time into arc, by multiplying by 15, they become—

$$+ 19'' \cdot 5 + 141'' \cdot 0 + 82'' \cdot 5 + 55'' \cdot 5$$

and these reduced differences expressed in arc, together with the azimuths of the four stars as found by the former computation, furnish the data for finding by a simple graphic construction the exact corrections to our assumed latitude and chronometer-error.

To make the graphic construction, we commence by drawing two lines OX and OY (Fig. 4) at right-angles, to serve as axes of coordinates. These lines were also be taken to

dinates. These lines may also be taken to represent on a Mercator chart the assumed parallel and meridian of the place of observation, and if our assumed values of the latitude, altitude, and chronometer-error were all correct, the point O would indicate our position. The construction is designed to find another point, Z, which indicates our true position notwithstanding the errors in our assumed data, and by scaling off the displacement of Z from

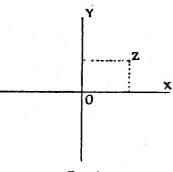


FIG. 4.

O we can find the corrections to our assumed latitude and chronometer-error which are necessary to convert them into the true values. A convenient scale for the diagram is 1 millimetre for 1" of longitude, as this will give a diagram from which, even allowing for slight inaccuracies of drawing, we can scale off latitude and time to well within 1", while the diagram itself will be easily contained on a foolscap page.

The usual convention of signs is to be followed in the diagram, distances measured to the right-hand of OY being positive, and those to the left negative. As all the differences we have to consider in our example are positive, and these, as will be seen from what follows, have to be laid off along the axis of OX, we draw OY near the left-hand side of our paper so as to leave plenty of room for the work. Had the differences been negative, we should have placed OY near the right-hand edge of our paper.

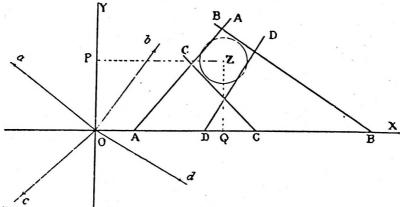


Fig. 5.

From the point O (Fig. 5), we set off four directions Oa, Ob, Oc, Od, representing the azimuths of the four stars, the direction

OY being considered as north. We next mark off the four reduced differences expressed in arc for the four stars, along the axis OX in the proper direction. Thus, in our example, we mark off $OA = +19.5 \,\mathrm{mm}$. OB = + 141 mm., OC = + 82.5 mm., and OD = + 55.5 mm., all to the right of O because all the differences are positive in sign. Then through the four points A, B, C, and D, we draw the four positionlines AA, BB, CC, and DD, perpendicular to the azimuths of the corresponding stars. These four star-lines will enclose a quadrilateral figure, within which we have next to choose a point Z so that a circle with Z as centre will be as nearly as possible tangent to all the four position-lines. This is easily done by trial and error with a pair of compasses. Then we can scale off ZP, perpendicular to OY, which gives us at once the required correction, in seconds of arc, to our assumed chronometer-error. If ZP is to the eastward of OY, we have assumed the chronometer too fast, and vice versa. can also scale off ZQ, perpendicular to OX, which multiplied by the cosine of the latitude gives us the required correction to our assumed latitude, our true latitude being to the north or south of the assumed latitude according as Z is above or below OX. In our example (see p. 41), ZP measures 64 mm. and is to the eastward of OY, so that we have assumed the chronometer to be too fast by $\frac{64}{15} = 4.3$ secs.; in other words, since we assumed the chronometer to be 2 h. 5 m. 50 s. slow, the true-chronometer-error is 2h. 5m. 50s. + 4.3 secs., or 2h. 5m. 54.3s. slow on local mean time. Similarly scaling ZQ, we find it measures 37.0 mm., and the correction to our assumed latitude is therefore $37'' \cdot 0 \times \cos 29^{\circ} 51' = 37 \cdot 0 \times 0.867 = 32.0''$, to be added to our assumed north latitude, because Z lies to the north of OX, giving as the true latitude 29° 51′ $0'' + 32'' \cdot 0$, or 29° 51′ $32'' \cdot 0$.

It may be interesting to consider the diagram a little further. It is obvious that neither the error in the assumed latitude, nor the magnitude of the assumed chronometer-error, can affect the size of the quadrilateral figure formed by the four position-lines; the only effect of variations in these data is to shift the position of the quadrilateral with reference to the axes. The factors which do affect the size of the quadrilateral figure are, firstly, error in the assumed constant altitude, and secondly, errors of observation.

An error in the assumed constant altitude, being itself a constant, will tend to throw out all the four bounding lines of the quadrilateral by equal distances from the point Z, or in other words, to increase

the radius of the circle described with Z as centre. The radius of the circle is, in fact, equal to the error in the assumed latitude multiplied by the secant of the latitude, and thus by scaling the radius from the diagram we can easily find the true altitude of observation; being careful to note that if the lines are displaced from the centre, Z, in the directions of the azimuths of the stars, the constant altitude assumed was too low, while if the lines are displaced from Z in directions opposite to the azimuths, the assumed altitude was too high. In our example, all the four position-lines are displaced from Z by about 13 mm. in the same direction as the azimuths, and the assumed constant altitude of observation is consequently too low by 13 cos 29° 51', or 11"; in other words, the true constant altitude of observation was 59° 59' 30" + 11", or 59° 59' 41".

Errors of observation may be expected to be irregular, and will therefore tend to throw the position-lines out unequally from the point Z. Thus the shape of the quadrilateral gives at a glance a very good idea of the precision of the observations; for if the observations are perfect, a circle with Z as centre can be made to touch all the four bounding lines at once, while with imperfect observations this will be impossible. In practice one chooses the point Z so that all the four lines shall be as nearly as possible tangent to a circle described from it as centre, the circle overlapping one pair of opposite sides of the quadrilateral by the same amount as it falls within the other pair, as is done in our example on page 41.

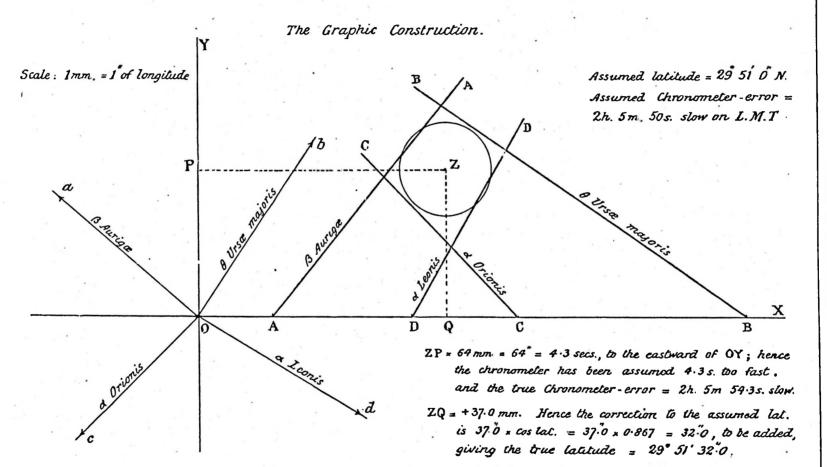
If four stars are observed, and it is found impossible to describe a circle so as to be nearly tangent to all the four bounding-lines of the quadrilateral, it may be taken as certain that either some one observation is a bad one, or a mistake has been made in the computation. A glance at the diagram will generally suggest some particular star as being the faulty one, and the computation for that star may be gone through again to try and find the mistake. if the mistake is due to bad observation of some one star, we have frequently no means of finding out which star it is, since a circle can be drawn within the quadrilateral to touch any three of its sides. This is a strong argument for observing more than four stars; for if, say, eight stars are observed and one position-line stands out considerably from, or cuts considerably into, a circle which nearly touches all the others, it is certain that the observation represented by that one position-line is defective, and it may either be rejected altogether or considered as of less weight than the others in choosing the point Z.

Example of Computation of Latitude and Chronometer-error from Astrolabe-observations of Four Stars, one in each Quadrant.

Helwân, approx. lat. 29° 51′ N.; approx. long. 2 h. 5 m. E.

March 22, 1918.

	β Aurige NW.			0 Ursæ maj	oris NE.	α Orionis	sw.	α Leon	s SE.
R.A.	5 h. 53 m. 3			R.A. 9 h. 27		R.A. 5h. 50	m. 45·7 s. 23′ 29″·0	R.A. 10 h. δ + 12°	
δ	+ 44° 56′ 33	3*.7		, ,	3′ 2″·3	• •	23 29 0	-	21 50 1
Alt. Lat. P.D.	59 59 30 29 51 0 45 3 26	log sec. log cosec.	0·0618149 0·1500817	59 59 30 29 51 0 37 56 58	0·0618149 0·2111489	59 59 30 29 51 0 82 36 31	0·0618149 0·0036238	59 59 30 29 51 0 77 38 9	0·0618149 0·0101915
Sum ½ Sum Alt.	2)134 53 56 67 26 58 59 59 30	log cos	Ī-5837636	2)127 47 28 63 53 44 59 59 30	ī·6434614	2)172 27 1 86 13 30 59 59 30	2 ⋅8184801	2)167 28 39 83 44 20 59 59 30	ī·0376641
1 Sum — Alt.	7 27 28	log sin	$\overline{1} \cdot 1132598$	3 54 14	$\overline{2} \cdot 8330387$	26 14 0	1.6454496	23 44 50	1.6049841
			2)2-9089200		$2)\overline{2}\cdot 7494637$		2)2-5293684		2)2·7146546
<u>і</u> Н.А. Н.А.	16 32 38 33 5 16	log sin	1.4544600	13 42 32 27 25 4	1.3747318	10 35 58 21 11 56	1.2646842	13 9 38 26 19 16	1.3573273
H.A. (time) R.A.	h. m. s. 2 12 21·1 5 53 33·3			h. m. s. 1 49 40·3 9 27 26·8		h. m. s. 1 24 47·7 5 50 45·7	,	h. m. s. 1 45 17·1 10 4 3·3	
L.S.T. S.T.L.M.N.	8 5 54·4 23 56 22·4	log cos à log sin H	Ī·8499 [.A. Ī·737]	7 37 46·5 23 56 22·4	1 · 7888 1 · 6632	7 15 33·4 23 56 22·4	ī∙9964 ī∙5583	8 18 46·2 23 56 22·4	ī∙9898 ī∙6468
S.T. Interval	8 9 32.0	log sec. a	lt. 0·3010	7 41 24 1	0.3010	7 19 11.0	0.3010	8 22 23.8	0.3010
Calc. L.M.T. Obs. Chr. time	8 8 11·8 6 2 20·5	log sin A	. Ī·8880	7 40 7·9 5 34 8·5	ī·7530	7 17 59·0· 5 12 3·5	ī·8557	8 21 1·5 6 15 7·8	ī·9376
Diff.	$+2 \ 5 \ 51 \cdot 3$	$A = 50^{\circ} 36^{\circ}$	W. of N.	+2 5 59.4 3	34° 30′ E. of N.	+2 555.54	5° 50' W. of S.	$+2 \ 5 \ 53 \cdot 7$	60° 1' E. of S.
Assumed chron. slow	2 5 50.0		`	2 5 50.0		2 5 50.0		. 2 5 50.0	
Reduced diff. Reduced diff. in arc	+ 1·3 + 19"·5			+ 9·4 + 141°·0		+ 5·5 + 82"·5		+ 3·7 + 55″·5	



Allowance for Variations in the Refraction.

It will but seldom happen in practice that changes in the refraction, consequent on fluctuations in the air-pressure and temperature during a series of observations, will be sufficiently large to be sensible with the small-sized astrolabe; for at the altitude of 60° it requires a change of temperature of 15° F., or of nearly an inch in the barometric pressure, to cause a change of 1" in the refraction. consequently be unnecessary, as a general rule, to consider the actual amount of the refraction, for so long as it is constant its exact value is not required in the computation, any small error in its assumed constant value being entirely eliminated in the graphic construction. But it is a good plan, in all cases where the greatest possible accuracy is aimed at, to read the barometer and thermometer at the beginning and end of the series of observations, as well as at intermediate observations if the series is spread over a long period; and to examine, by reference to the refraction-tables on page 278, whether or not the change of refraction has been sufficiently sensible to require its being allowed for in the reductions. When the refraction for a particular star is found to differ by, say, 1" from that for the others of a series, it is most conveniently allowed for by making the corresponding alteration in the altitude assumed in calculating the time for that particular star. For example, if in the series computed on page 40 the refraction for a Orionis had been found to be 1" less than for the other stars, we could have allowed for this by increasing its altitude I" as compared with that of the remaining stars in working out its calculated time.

Allowance for Rate of the Chronometer used.

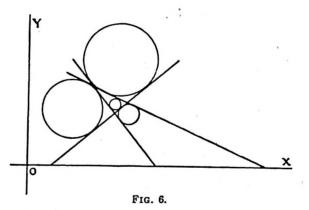
In the above description of the manner of reducing the observations, it has been assumed that the rate of the chronometer was either nil, or so small as to be negligible compared with the errors of observation, during the time occupied by the observations. When the rate is not negligible, it is of course necessary to allow for it. This is most easily done at the stage where we have to make an assumption of the chronometer error (see p. 36); instead of subtracting a constant assumed chronometer-error from all the four computed times, we have merely to subtract the same error corrected for rate. Thus, for instance, in our example given above, let us suppose that the chronometer had been gaining one second per hour, instead of

having a negligible rate. The four stars were observed at the chronometer times 5h. 12m., 5h. 34m., 6h. 2m., and 6h. 15m., and we assumed the chronometer to be 2h. 5m. 50s. slow on local time throughout. But if the chronometer had been gaining one second per hour, and was 2h. 5m. 50s. slow at 5h. 12m., it would have been 2h. 5m. 49.6s. slow at 5h. 34m.; 2h. 5m. 49.2s. slow at 6h. 2m.; and 2h. 5m. 49.0s. at 6h. 15m. We should have only have had to substitute these figures for those previously used, in order to have allowed completely for the chronometer-rate.

Case where only Three Stars are observed.

As already mentioned (p. 5) it is always desirable that at least four stars should be observed in order to secure good fixation of a geographical position. But it may easily happen in practice that only three stars can be observed at a place, owing to clouds or other

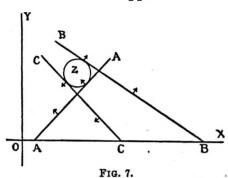
causes. In such a case, provided all the three observations are reliable, the position can be determined. The process with three stars is exactly the same as with four, except that in the graphic construction we have only three position-lines to deal with, and instead of choos-



ing our point Z as the centre of a circle touching the four sides of a quadrilateral figure, we have to choose it as the centre of a circle touching three lines. This may seem to introduce a difficulty, for we can in general draw four different circles (Fig. 6) fulfilling this condition, and we require to know which of the four is the one to be chosen. All difficulty vanishes, however, if we remember that in the diagram the point Z represents the observer's zenith, and that the effect of a constant small change of altitude is to displace all the three stars equally from the zenith, either all three in the directions of their azimuths, or all three in the opposite directions to their azimuths. We may thus use the known fact that our assumed constant altitude is not quite the true one, to determine which of the four possible circles is the one to be employed in solving the problem. For we have only to mark the three position-lines with arrows

showing the corresponding azimuths, in order to see at a glance which circle will fulfil the condition that all the azimuths shall point directly to, or directly from, its centre; and that circle is the one to be chosen.

Thus let us suppose that in our former example only the three



stars in the NW., NE., and SW. quadrants had been observed. On plotting the graphic construction we should then have only the three position-lines, AA, BB, and CC. In Figs. 7 and 8 these position-lines are shown with the corresponding azimuths indicated by arrows; and we can at once see

that the circle would be wrongly placed in Fig. 7, and correctly in Fig 8, because in the former case one azimuth would point to the

centre of the circle and the other two away from it, while in the latter case all three azimuths point away from the centre of the circle.

It might at first sight appear that when only three stars are observed, the construction does not allow of any check on

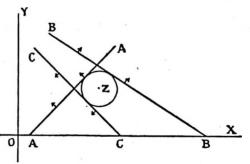
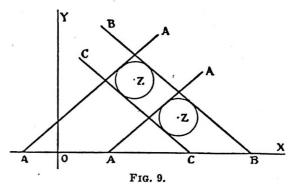


Fig. 8.

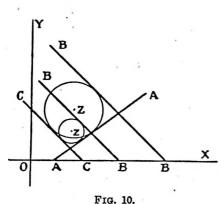
the accuracy of the observations, such as is afforded with four or more stars by noticing whether a circle will nearly touch all the four lines. And this is actually the case unless we know pretty exactly the angle of the prism used. But if previous observations have been taken with the same instrument under similar conditions, and worked out with the same assumed constant altitude, the deviation of the true constant altitude from the assumed one will be known, and is, except for slight variations due to changes in the refraction, constant for the same instrument. This is expressed in the graphic construction by the radius of the circle, of which Z is the centre, being sensibly constant for the same instrument when the same constant altitude is assumed in working out the results.

Whenever, therefore, only three stars are observed, it is a useful check to examine whether the radius of the circle which touches the three position-lines is in fairly close agreement with that found in other observations under similar conditions with the same instrument and the same assumed constant altitude. For if it is not, it is tolerably certain either that one of the observations is a bad one, or that a mistake has been made in the computation. In the latter case, a revision of the computation will detect the mistake and it can be remedied.

Though the above useful check should never be neglected, it is necessary to point out that it does not afford a test in all cases, even if the prismangle and refraction are known with extreme accuracy. It fails entirely to



detect a mistake, however large, in the observation or reduction of a particular star, if the remaining two stars differ in azimuth by about 180°. This will be readily seen from Fig. 9, where the position-



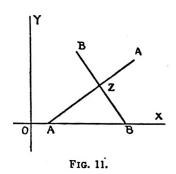
line, AA, may be in either of the two places shown without affecting the radius of the circle round Z. Had the mistake been connected with one of the stars observed in opposite quadrants, as in the position-line, BB, in Fig. 10, the variation in the diameter of the circle would at once have rendered the mistake apparent.

Case where only Two Stars are observed.

Under certain conditions a fairly exact determination of latitude and time can be made from astrolabe-observations of only two stars. The conditions necessary for this to be possible are:—

- (1) The constant altitude at which the two stars are observed must be accurately known.
- (2) Neither star must be very near to the meridian.
- (3) The azimuths of the two stars must differ by about 90°.

The reasons for the first of these conditions being necessary will be easily grasped by considering the graphic diagram for four stars, Fig. 5 on page 37. In that diagram the point Z is located as the centre of a circle touching four lines, and the radius of the



circle, as has been explained, depends on the error in the assumed constant altitude of observation. If the assumed constant altitude is the *true* altitude, then the radius of the circle becomes zero, and the point Z can be located by the intersection of any *two* of the position-lines (Fig. 11), that is, from any two star-observations.

The second condition, that neither of the two stars observed shall be near the meridian, is a practical rather than a theoretical one. It arises from the circumstance that with a star very near to the meridian a very small change of altitude corresponds to a relatively large change in azimuth and time; and consequently with such a star a very small error in the latitude of the place would lead to errors in the computed time and azimuth of passage of sufficient magnitude to render the graphic solution sensibly inaccurate. By keeping to stars at least 20° from the meridian, however, we avoid any risk of inaccuracy in drawing the graphic construction from the computed data, notwithstanding any reasonable amount of error in the assumed latitude of the place.

The third condition, that the stars should differ by about 90° in azimuth, is clearly dictated by the consideration that the point Z in the diagram will be the more accurately located, the more nearly the angle between the two position-lines approaches right-angles. If the two lines intersect very acutely, minute errors both of observation and of plotting, as well as any small residual uncertainty in the altitude, will exercise a relatively large influence on the accuracy of the result.

We will now consider how best to fulfil these conditions in practice; and firstly, as regards the constant altitude of observation. We have seen that in the case where four or more stars were observed, the graphic construction gave the true altitude of observation by measuring the radius of the circle described with Z as centre. Except for variations in refraction, the true altitude is always the same with the same instrument if the observations are properly taken; and consequently if several sets of four or more stars have already been observed with a particular astrolabe, the constant altitude of observation for that astrolabe under known conditions of tem-

perature and pressure will be known within 1" or so. We have then only to correct that altitude for any change of refraction due to the conditions under which our two stars are observed, in order to obtain a very close approximation indeed to the true constant altitude of our observations. For instance, on page 39 we found that the true constant altitude at which four stars were observed was 59° 59′ 41", and let us suppose that this was with a barometerreading of 29 inches and thermometer-reading of 70° F. To find the constant altitude for the same instrument with the barometer at 30 inches and the thermometer at 50° F., we have merely to remember that at altitude 60° each increase of one inch in the barometer-reading will increase the refraction by 1".12, while each diminution of 1° F. of temperature will increase the refraction by 0".067. Under the new conditions the refraction will consequently be increased by about 2", so that the true altitude will be 2" less than under the old conditions, or 59° 59′ 39″. A convenient table for ascertaining the refraction at the altitude of 60° under various conditions of temperature and pressure is given on p. 278.

In regard to the other two conditions, that neither star should be near the meridian and that the difference of the azimuths of the two stars should be somewhere about 90°, both these conditions will be sufficiently fulfilled, provided the two stars employed are contained in adjacent quadrants in the tables.

The two-star observation with the astrolabe will of course never be employed where great accuracy is required, nor where it is possible to observe a larger number of stars. But on exploratory work it sometimes happens that it is only possible to remain one night at a place; and if the night is too cloudy for an extended set of observations it may still be possible to observe two stars and thus get a fairly close approximation to the position, instead of being forced to abandon the observation altogether. If the constant altitude of the instrument has been well determined from previous observations, the resulting latitude and time from a satisfactory observation of only two stars may be expected to be within about 5" and 0.3 second respectively of the truth, and this is frequently as near as the position can be plotted on exploratory maps. The computation should always be gone through twice, preferably by two independent computers; for mistakes in the computation of only two stars cannot be detected in the graphic construction, and are hence absolutely fatal to accuracy.

CHAPTER VI.

REMARKS ON THE COMPARATIVE MERITS OF THE ASTROLABE, SEXTANT, AND THEODOLITE AS INSTRU-MENTS FOR DETERMINING GEOGRAPHICAL POSITION.

Experience on recent boundary and other surveys has shown that a higher degree of precision of latitude and time is obtainable by the use of the astrolabe than by any of the methods ordinarily practised with the sextant or theodolite. This is especially true of the larger types of astrolabe, but the statement also holds good, though of course to a lesser extent, of observations with the smallest type of astrolabe, with which alone this handbook is concerned.

In enquiring into the reasons for this enhanced precision, we must remember that the astrolabe makes use of the principle of equal altitudes, a principle not peculiar to the astrolabe, but also capable of being used with either a sextant or theodolite, though up till very recently the principle has but seldom been employed with the last two instruments. We are thus led to ask at the outset whether the great success of the astrolabe is due to something characteristic of the instrument itself, or to the fact that it employs the principle of equal altitudes. In order to answer this question, we must compare the precision of the results achieved by the astrolabe, not with those attained by the sextant and theodolite when used in methods which make use of absolute altitudes, but with those obtainable from these instruments by the method of equal altitudes; in which latter method, of course, all circle-readings are dispensed with.

Comparison of Astrolabe and Sextant.

Taking first the comparison with the sextant, there is but little direct experience to guide us. For although one of the earliest applications of the principle of equal altitudes to the simultaneous determination of latitude and time was a sextant-observation by Gauss in 1808,* the principle has never been made use of in the ordinary practice of hydrographic surveyors, who are the chief users of the sextant for determining position, but has remained to this day of

^{*} See Chauvener, "Spherical and Practical Astronomy," 5th Edition, Philadelphia, 1891, Vol. 1, p. 284.

merely academic importance so far as the sextant has been concerned. All modern improvements in the sextant, such as the provision of convenient stands, and improvements in the precision of graduation of the arc and vernier, have been designed to increase the accuracy of the measurement of absolute altitude, on which everything depends in the case of the methods ordinarily employed; while in using the principle of equal altitudes, we are not concerned with measuring what the altitudes actually are, but only with ensuring that they shall all be really equal, and consequently the perfection of graduation of the arc is of no importance in this connection.

But although we have no actual measured comparisons on which to base our conclusion, we may nevertheless form a sound judgment as to the relative merits of the astrolabe and the sextant from our knowledge of the construction of the instruments and of the methods of handling them in the field. We have only to ask ourselves whether, given a first-class sextant on a stand, clamped at an altitude of 60°, we could note the times at which star-images passed each other in the field of view with the same precision as we could note the corresponding times when using an astrolabe. The answer is surely in the negative. For although with the sextant used in this manner we eliminate almost all the usual sources of error which occur in ordinary observations with the instrument, such as uncertainties of index-error, refraction, and circle-errors; and although in the sextant, as in the astrolabe, the images pass each other with double the velocity of movement of either of them; yet the telescopic power which can be used with a sextant is inferior to that of the astrolabe. And the convenience of observing, which is a considerable factor in securing accurate timing, is certainly much greater with the astrolabe, where one looks horizontally through the telescope, than with the sextant, where the sight is steeply inclined. It may reasonably be doubted, also, whether a sextant clamped at a fixed angle really gives an altitude of quite the same constancy for the different stars as that given by the astrolabe, owing to the difference in construction of the two instruments.

The sextant has one advantage over the astrolabe, in that the constant altitude can be varied for different sets of observations, instead of being confined rigidly to a single value; and occasionally this might be a convenience by permitting of a better selection of stars, or by avoiding clouds. But, generally, if the sky is clear at lower altitudes it is clear at 60°, and by keeping to the fixed altitude

of 60° there is the great advantage of being able to prepare one's programme quickly from the star-tables given in this book for that altitude, instead of either incurring the labour of calculating a special programme for some other altitude, or waiting patiently for stars to enter the field.

There is, we think, no doubt that even without the use of the astrolabe, a very considerable improvement in the precision of fixation of positions of shore-stations on hydrographic surveys might be attained by abandoning the usual practice of measuring absolute star-altitudes, and using the sextant for the method of equal altitudes, preferably employing 60° as the constant altitude of observation and making use of the star-tables and methods of reduction given in this handbook, exactly as if an astrolabe were employed. use of the equal-altitude principle does away with practically all instrumental errors, which are never entirely eliminated by other methods, and is at the same time more easily carried out because it involves no circle-readings whatever. Hitherto the considerable amount of preliminary labour which has had to be gone through in preparing star-lists for observation has probably deterred many surveyors from taking up the equal-altitude method, even when they were convinced of the superior accuracy of the results obtainable. Our star-tables, by reducing the work of preparation of a programme for an altitude of 60° to a matter of only a few minutes, will, we trust, go far to remove this difficulty; and the process of computation which we have introduced is so simple and rapid that the work of reducing a set of equal altitudes by its means is actually shorter and less laborious than that of computing the time from altitudes of a pair of east and west stars and the latitude from a set of circummeridian altitudes.

The remarks which we shall make further on, as to the advantage of the theodolite in cases where stars can only be occasionally observed through rifts in the clouds, apply also to the sextant, but in a somewhat less degree, because owing to the artificial horizon having to be moved it is not so easy with the sextant as with the theodolite to swing rapidly round from one star to another.

Comparison of Astrolabe and Theodolite.

The principle of equal altitudes has been employed with the theodolite to a considerable extent in recent surveys in Egypt, and there is consequently a much better experimental basis for comparing the relative merits of the astrolabe and theodolite than is the case with the astrolabe and sextant. It may be stated at the outset that the results of the equal-altitude method with the theodolite have proved it to be so convenient in the field, and have given so much more precision in the determination of latitude and time, that the old methods of meridian and circummeridian altitudes for latitude, and altitudes of east and west stars for time, have been to a large extent abandoned.* This proves that the enhanced accuracy of the astrolabe results as compared with those of the theodolite is at least in part due to the astrolabe making use of the principle of equal altitudes, and not entirely to any inherent quality in the construction of the astrolabe itself.

With the object of examining the relative precision of observations of the passage of star-images with the astrolabe, as compared with observations of the passage of stars over the horizontal wire of a 5-inch Troughton & Simms theodolite in the method of equal altitudes, we carried out a series of observations at Helwan Observatory on four nights during July 1917. The approximate constant altitude chosen for the theodolite-observations was 30°. because this altitude is convenient for observation with the ordinary eveniece of the theodolite, whereas to have adopted the altitude of 60° as in the astrolabe would have involved the use of the diagonal eveniece.† The telescopic power of the theodolite was approximately the same as that of the astrolabe. The level on the microscopearm of the theodolite had a movement of one division for each 5" of tilt, and the positions of the ends of the bubble were estimated to tenths of a division. The programmes were prepared so as to observe on each night an equal number of stars of about the same brightness, at about equal intervals of time, with each of the two instruments, and each of us observed half the total number of stars with each instrument. The times in all cases were taken on the same chronometer, using the Dent "time-of-flight" watch. all, fifty observations were made with the small-sized astrolabe,

^{*} Sec "Modern Methods of Finding the Latitude with a Theodolite" in the "Geographical Journal," XLIX (1917), p. 440; the matter is also discussed in a paper on "Theodolite Observations for Time and Azimuth on Exploratory Triangulation-surveys" to be published by the Royal Geographical Society after the war.

[†] The diagonal eyepiece usually has only half the magnification of the higher-power direct eyepiece in English theodolites, and this is one of the reasons for preferring not to employ the diagonal eyepiece where its use can be avoided.

and fifty-five with the theodolite. On computation of the results, it was found that the probable deviation of a single observation from a constant altitude was 3".2 with the astrolabe, and 5".4 with the theodolite.

These deviations are larger than we expected with either instrument. In the case of the astrolabe, our observations were made before either of us had had much practice with the instrument; and in the case of the theodolite, the accuracy was doubtless influenced to some extent by the fact that a ruled glass diaphragm was used in the eyepiece, instead of the usual spider-lines. With more experience with the astrolabe, and a fine spider-line diaphragm in the theodolite, it is likely that the deviations would be considerably smaller. But the results represent very fairly, we think, the relative precision of observations with the two instruments under good field conditions, and show conclusively the advantage of the astrolabe.

The greater precision of the results in the case of the astrolabe is doubtless due in the main to two factors. Firstly, the doublyrapid relative motion of the star-images in the astrolabe as compared with the motion of the single image relative to the fixed wire in the theodolite; and secondly, the non-dependence of the astrolabe on level-readings. With the theodolite there is always a little uncertainly as to whether the bubble occupies exactly the same position at the moment of reading it, immediately after the observation, as it did at the instant when the star was observed. We are inclined to think that this second factor is the more important of the two. Both factors are, of course, due to inherent differences in the instruments used, and we conclude that while the precision obtainable with the astrolabe as compared with the usual methods of observing latitude and time with the theodolite is in part due to the employment of the principle of equal altitudes, it is also partly due to the peculiar construction of the astrolabe, which renders it a better instrument for the application of the equal-altitude principle than the theodolite.

There can thus be no question that where the essential object of a surveyor is to determine latitude and time with the greatest possible precision, he should prefer the astrolabe to the theodolite for the purpose. In particular, this will mostly be the case on boundary surveys and in observations either for the control of triangulation or for determining fundamental positions on land or marine surveys with the aid of wireless time-signals. In such work everything must give way to precision, and questions of transport or of the time

which may have to be spent in waiting for suitable weather-conditions are relatively minor considerations.

The case may be otherwise on reconnaissances and exploratory surveys, where only good fixation of positions, and not the highest obtainable precision, is required, while economy of time and transport are of great importance. The theodolite may then be much to be preferred to the astrolabe, because of the far greater variety of observations practicable with it. A great drawback to the astrolabe. where time is a great consideration, is the fact that it can only be used to observe stars at a fixed altitude of 60°, whereas with the theodolite we may observe stars at any altitude we please; and it may easily happen that during an interval of the night which is free from clouds, or otherwise well fitted for observation, stars crossing the 60° altitude-circle are few in number, while abundance of stars can be observed at other altitudes. Further, while the astrolabe cannot be used for any other purpose than to determine latitude and time,* the theodolite can be employed in terrestrial as well as celestial observations; and if economy of transport is a great consideration and only one instrument can be taken, the theodolite should always be chosen rather than the astrolabe. The theodolite has yet another advantage over the astrolabe in its stability in a moderate wind. Our experience with the astrolabe is that in anything approaching what sailors call a "fresh breeze," observations are quite impossible, even when the wind-screen is employed, unless the instrument is exceptionally well sheltered. Under similar conditions a five-inch theodolite on framed legs is quite stable in the open; and even in a strong head-wind laden with sand, the inaccuracy of observation with the theodolite is not very great, being due more to the inconvenience of observing than to tremor of the instrument itself.

When only one night can be spent at each camp, as for instance usually happens on military reconnaissances in desert regions, it would be folly to rely entirely on the astrolabe, unless it is certain that cloudless skies and moderately still air may be depended on, which is seldom the case. The whole night may be too cloudy or too windy for astrolabe observations to be possible, and then unless the surveyor employs some other instrument there is no chance whatever of fixing

^{*} The astrolabe cannot even be used to determine azimuth, since it cannot be accurately pointed on to a terrestrial referring-mark.

his position. But even on very cloudy nights there may occur rifts in the clouds through which stars can be seen for a few minutes at some time or other, and the surveyor who keeps a watch for these and knows his stars well, and is besides versed in a variety of methods which can be practised with the theodolite, will be able to determine his position with tolerable precision, instead of remaining ignorant of his whereabouts. We have deliberately rejected the astrolabe from use on recent military reconnaissances for the above reason. employing a 5-inch theodolite instead, using the equal-altitude principle wherever possible; in many cases, however, we have had to abandon the use of the equal-altitude method altogether, by reason of the sky never remaining clear for a sufficient time for equal-altitude observations to be taken, and have been forced back on to absolute altitudes of circumpolar or circummeridian stars for latitude, and altitudes of east and west stars for time. Whenever it has been practicable to employ the method of equal altitudes with the theodolite, the results have not been so very far behind those which could have been obtained by the astrolabe in precision; and in other cases, a latitude within 10", and a longitude within one second of time, have generally been determined, even when stars have only been visible for short periods at fairly long intervals.

The small-sized astrolabe is, however, so light and portable (weighing less than thirty pounds all complete) that it will comparatively seldom happen that the small extra transport required for it will not be available on exploratory expeditions, and we recommend that whenever possible both astrolabe and theodolite should form part of the equipment of such expeditions. It will then be practicable for the explorer, by using the astrolabe whenever the weather-conditions permit, to determine a number of positions on his route with greater ease and accuracy than would be possible to him if only the theodolite were taken, while the latter instrument will serve to fix his position under circumstances which render the astrolabe inapplicable, as well as to carry out terrestrial observations.

STAR-TABLES

FOR USE WITH THE PRISMATIC ASTROLABE.

GIVING THE APPROXIMATE LOCAL SIDEREAL TIMES AND AZIMUTHS AT WHICH NAUTICAL ALMANAC STARS, OF MAGNITUDE 4.0 AND BRIGHTER, CROSS THE ALTITUDE-CIRCLE OF 60° , AT AZIMUTHS WITHIN THE MIDDLE 40° OF EACH QUADRANT, FOR EACH DEGREE OF LATITUDE FROM 55° NORTH TO 55° SOUTH.

These tables comprise all the stars of magnitude 4.0 and brighter whose apparent places are given in the "Nautical Almanac" for 1918, and which cross the altitude circle of 60° within the limits of azimuth mentioned above.

Stars printed in italics are such as cross the 60° altitude-circle outside the middle 40° of the quadrants.

NE. QUADRANT

SE. QUADRANT

·			_
Star.	Mag.	L.S.T.	Az.
ζ Persei β Tauri α Geminorum β Geminorum 40 Lyncis ε Boötis ε Boötis α Coronæ Boreal. ζ Herculis ε Herculis μ Herculis γ Lyræ β Cygni ε Cygni ε Cygni ε Cygni β Andromedæ β Andromedæ β Andromedæ β Trianguli β Trianguli	2·9 1·8 2·9 1·8 2·3 2·3 3·9 3·5 3·3 2·6 3·1 2·5 2·4 3·5 3·1	h. m. 2 2 2 55 4 3 5 38 6 24 7 7 10 20 12 48 13 10 13 35 14 31 14 49 15 15 16 33 17 3 18 17 18 41 19 36 21 7 21 52 22 45 22 53 22 58 23 57	130 125 144 128 145 119 107 134 123 150 153 129 148 127 148 123 137 138 149 144 117 135 119

SW. QUADRANT

NW. QUADRANT

					_
Star.	Mag.	L.S.T.	Az.	•	
	<u> </u>	h. m.	0		ŀ
β Pegasi	2.5	o 8	211		l
η Pegasi	3.1	0 11	222	· .	١
α Andromedæ	2.2	I 23	216		l
δ Andromedæ	3.2	2 12	225		l
β Andromedæ	2.4	3 17	243		l
β Trianguli	3.1	4 13	24 I		1
ζ Persei	2.9	5 36 6 39	230		l
β Tauri	1.8		216		l
L Aurigæ	2.9	6 49	235		l
θ Aurigæ	2.7	8 18 8 56	249		١
β Geminorum α Geminorum	1·2 2·0		215		l
		9 20 II 25	241		l
40 Lyncis Iz Canum Venat.	3·3 2·9	15 24	253	-	١
ε Boötis	2.7	15 47	210		l
ρ Boötis	3.8	16 8	226		l
α Coronæ Boreal.	2.3	16 31	207		ĺ
δ Boötis	3.5	17 14	237	+	l
ζ Herculis	3.0	18 27	231		l
ε Herculis	3.9	18 39	228		l
μ Herculis	3.2	18 53	212		ŀ
β Cygni	3.5	20 37	212		ľ
γ Lyræ ζ Cygni	3.3	20 49	233		
	3·4 2·6	22 42 22 45	223		l
ε Cygni	2-0	22 45	23/	İ	l
					l
					l
					١
				l	l
				1	ĺ
					l
					l
					l
					l
*:					ľ
		- 0			١
					۱
					١
					١
	i	-			١
		_	1		١
		140	-	<u>-</u>	
1					
,				1	l
	l				L

Star.	Mag.	L.S.T.	Az.
α Cephei β Cephei ζ Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Persei α Aurigæ ο Ursæ Majoris β Ursæ Majoris α Draconis β Ursæ Minoris ι Draconis γ² Ursæ Minoris η Draconis γ Draconi	2.6 3.3 3.6 2.5 2.8 3.4 2.5 3.3 2.4 2.5 3.3 2.4 2.5 3.3 2.4 2.5 3.3 2.4 2.5 3.5 3.2 3.5 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	h. m. 1 10 1 31 1 51 3 50 4 14 4 14 5 8 5 44 6 29 8 16 12 14 12 52 14 37 14 52 15 53 16 29 17 59 18 52 19 9 18 52 19 9 19 24 20 15 21 8 21 18 23 13	308 324 298 300 295 304 302 319 272 305 286 296 308 295 313 333 301 328 306 315 285 318

NE. QUADRANT

Γ	Star.	Mag.	L.S.T.	Az.	
	a Auriga o Ursæ Majoris θ Ursæ Majoris a Ursæ Majoris δ Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris α Draconis α Draconis ι Draconis ι Draconis α Cephei β Cephei β Cassiopeiæ α Cassiopeiæ α Cassiopeiæ δ Cassiopeiæ ε Cassiopeiæ γ Persei	0.2 3.5 3.2 2.4 3.4 1.7 2.4 3.2 2.3 3.5 2.2 2.6 3.6 2.2 2.3 2.6 3.6 2.2 2.8 3.4 2.8 3.4 2.8 3.6 2.8 3.6 2.8 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6	h. m. 2 7 4 39 6 4 7 12 7 21 8 33 9 14 9 48 10 11 11 2 36 13 17 14 34 15 19 17 30 17 35 18 29 20 24 21 1 21 8 21 37 22 0 23 32	87 54 73 51 63 64 66 46 26 31 58 53 44 41 51 55 64 57 49 70	

SE. QUADRANT

Star.	Mag.	L. S.T.	Az.
C Persei β Tauri α Geminorum β Geminorum β Geminorum β Geminorum γ Lyncis α Coronæ Boreal. ζ Herculis ε Herculis ε Herculis ε Cygni α Andromedæ β Andromedæ β Andromedæ β Andromedæ β Andromedæ β Trianguli	2·9 1·8 2·9 1·8 2·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3	h. m. 1 57 2 50 3 54 5 33 5 53 6 16 7 3 10 18 12 42 13 6 13 25 14 19 16 23 16 58 18 7 18 37 19 30 21 0 21 42 22 36 22 50 22 52 23 53	127 122 140 125 159 141 116 105 130 120 145 147 126 129 143 124 143 120 134 134 134 134 131

NW. QUADRANT

Star.	Mag.	L.S.T.	Az.	,	Star.	Mag.	L.S.T.	Az.
Pegasi β Pegasi α Andromedæ β Andromedæ β Andromedæ β Trianguli ζ Persei β Tauri α Aurigæ ε Geminorum β Geminorum α Geminorum α Geminorum α Coronæ Boreal. δ Boötis α Coronæ Boreal. δ Boötis α Herculis μ Herculis μ Herculis μ Cygni ζ Cygni ζ Cygni ς Cygni ς Cygni	3·I 2·5 2·2 3·5 2·4 3·1 2·9 1·2 2·3 2·2 2·3 3·2 2·3 3·3 3·5 3·5 3·5 3·5 3·5 3·5 3	h. m. 0 17 0 18 1 32 2 18 3 20 4 17 5 41 6 48 6 54 7 25 9 4 9 25 11 29 15 26 15 57 16 14 16 43 17 18 18 32 18 45 19 3 20 47 20 54 22 48 22 49	226 216 221 229 245 243 233 220 238 201 219 235 244 255 215 230 213 240 231 217 217 226 240		α Cephei β Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ α Aurigæ α Aurigæ α Aurigæ α Aurigæ α Aurigæ α Ursæ Majoris β Ursæ Majoris α Draconis β Ursæ Minoris α Draconis γ 2 Ursæ Minoris γ Draconis γ	2.6 3.3 3.6 2.4 2.5 2.3 2.8 3.4 2.0 3.4 2.0 3.4 2.0 3.4 2.2 3.5 3.1 2.4 2.5 3.3 2.4 2.0 3.4 2.5 3.5 3.6 2.4 2.5 3.7 2.4 2.5 3.7 2.4 3.6 3.7 2.4 3.7 2.4 3.7 2.4 3.7 2.7 3.7 2.7 3.7 2.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3	h. m. 1 4 1 21 1 47 3 46 4 11 4 36 5 38 6 26 8 15 12 99 12 50 14 33 14 46 15 49 16 26 16 54 17 53 18 39 19 13 20 10 21 1 21 16 23 5	309 325 299 301 296 305 303 311 290 273 306 287 297 309 296 294 314 302 329 307 316 286 319
	*	,						
						<u> </u>		

NE.

QUADRANT

Star. Mag. L.S.T. Az. m. α Auriga 0.2 2 7 85 Ursæ Majoris 3·3 3·3 53 71 4 44 0 Ursæ Majoris Ġ 6 α Ursæ Majoris 2.0 7 17 50 β Ursæ Majoris 7 24 8 37 61 2.4 δ Ursæ Majoris 60 3.4 ε Ursæ Majoris 62 1.7 9 18 ζ¹ Ursæ Majoris 2.4 9 51 64 α Draconis 3.6 10 18 45 β Ursæ Minoris 11 18 2.5 25 γ² Ursæ Minoris 3.1 11 41 30 . Draconis 11 46 56 3.2 η Draconis ζ Draconis 2.9 I2 42 51 43 73 3.5 13 24 γ Draconis δ Draconis Draconis 2.4 14 36 3.5 15 27 39 α Cephei ... 2.6 17 35 50 β Cephei ... 17 45 3.3 34 ζ Cephei ... 18 33 3.6 59 β Cassiopeiæ 2.4 57 63 20 29 α Cassiopeiæ 2.5 2 I 5 Y Cassiopeiæ 2.3 54 55 48 69 21 13 δ Cassiopeiæ 2.8 21 42 E Cassiopeiæ 22 6 3.4 γ Persei ... *3*·*1* 23 34

		ADI		
	Star.	Mag.	L. S.T.	Az.
βαεβοει ρδεαζεδμγβεζηιβμαδ	Leonis Canum Venat. Boötis Boötis Boötis Coronæ Boreal. Herculis Herculis Herculis Cygni Cygni Cygni Cygni Pegasi	2·9 1·8 2·9 1·8 2·3 3·1 2·8 3·5 7·3 3·9 3·5 3·3 3·3 3·5 3·5 3·5 3·5 3·5	h. m. 1 52 2 46 3 47 5 40 6 59 8 55 10 16 12 37 13 16 14 39 15 16 53 17 59 18 33 19 24 20 54 21 34 22 29 22 46 23 50	0 124 119 136 122 152 137 113 159 103 127 140 142 123 126 139 121 138 117 130 130 130 135 141 139 142 144
J				

, 			
Star.	Mag.	L.S.T.	Az.
Star. 7 Pegasi β Pegasi α Andromedæ β Andromedæ β Andromedæ β Trianguli ζ Persei α Geminorum α Geminorum α Geminorum α Geminorum α Leonis 40 Lyncis α Coronæ Boreal. δ Boötis α Coronæ Boreal. δ Boötis α Herculis α Herculis α Herculis α Herculis α Herculis α Lyræ α Cygni α	Mag. 3·1 2·5 2·2 3·5 2·4 3·1 2·9 1·8 2·9 3·2 2·0 3·3 2·9 3·5 3·2 3·9 3·5 3·2 3·6 3·4 4·0 3·7	h. m. o 23 o 26 i 39 2 24 3 24 4 20 5 46 6 55 8 7 38 i 6 6 16 19 i 6 52 i 7 21 i 8 9 i 8 37 i 8 50 i 9 i 1 20 55 20 59 22 53 22 54 22 59 23 31	Az. 230 221 225 232 248 246 236 224 241 208 223 238 201 247 257 220 233 218 243 206 237 234 221 222 239 243 230 206 201

			 ,
Star.	Mng.	L.S.T.	Az.
α Cephei β Cephei ζ Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ α Aurigæ ο Ursæ Majoris θ Ursæ Majoris α Draconis β Ursæ Minoris γ² Ursæ Minoris γ Draconis η Draconis γ	2.6 3.3 3.6 2.4 2.5 2.8 3.4 2.0 3.3 2.4 2.0 3.7 2.4 3.5 2.2 3.5 2.9 3.2 4 3.2	h. m. 0 59 1 11 1 43 3 41 4 7 4 31 4 58 6 24 12 48 14 30 14 41 15 45 16 51 17 46 18 24 19 1 20 54 21 14 22 57	310 326 301 303 297 306 305 312 291 275 307 288 299 310 300 298 296 315 335 330 304 309 317 287 321
		•	
÷	911		
		-	i

LATITUDE 52º NORTH.

NE. QUADRANT

Star. L.S.T. Mag. Az. 0 h. m. a Auriga 0.2 2 8 83 o Ursæ Majoris 3·3 3·3 52 70 4 49 6 8 0 Ursa Majoris α Ursæ Majoris 2.0 7 23 49 β Ursæ Majoris 7 28 8 26 60 2.4 γ Ursæ Majoris δ Ursæ Majoris 2.5 66 8 41 3.4 59 ε Ursæ Majoris 1.7 61 9 22 ζ¹ Ursæ Majoris 63 2.4 9 55 α Draconis 3.6 10 25 44 ι Draconis 3.2 11 51 55 γ²Ursæ Minoris 11 52 3.1 29 η Draconis ζ Draconis 2.9 12 47 50 42 71 3.2 13 32 γ Draconis δ Draconis 14 38 2.4 3.2 15 36 38 α Cephei 2.6 17 41 49 β Cephei ... ζ Cephei 3.3 33 17 55 Cephei ... 58 3.6 18 37 β Cassiopeiæ 56 20 33 21 8 2.4 α Cassiopeiæ 62 2.5 Cassiopeiæ 2.3 21 18 53 8 Cassiopeiæ ••• 2.8 21 47 54 € Cassiopeiæ 22 I2 3·4 *3*·1 47 68 Y Persei ... 23 37

Star.	Mag.	L. S.T.	Az.
		h. m.	i
α Arietis	2.2	1 22	161
ζ Persei	2.9	1 48	121
ι Aurigæ	2.9	2 42	116
17 Tauri	3.8	2 45	154
η Tauri	3.0	2 49	155
β Tauri	1.8	3 41	132
α Geminorum	2.0	5 24	119
ε Geminorum	3.5	5 28	146
β Geminorum	I · 2	6 2	133
40 Lyncis ε Leonis	3.3	6 57	111
E Leonis	3·1 2·9	8 41 <i>10 15</i>	152
ρ Boötis	3.8		101
8 Boötis	3.2	I2 32 I3 0	1124
ε Boötis	2.7	13 9	136
α Coronæ Boreal.	2.3	14 2	138
ζ Herculis	3.0	14 35	120
ε Herculis	3.9	14 59	123
8 Herculis	3.2	16 4	148
μ Herculis	3.2	16 9	135
γ Lyræ	3.3	16 49	118
β Cygni	3.2	17 52	134
ε Cygni	2.6	18 31	115
ζ Cygni	3.4	19 19	127
η Pegasi	3.1	20 50	127
L Pegasi	4.0	20 56	148
β Pegasi μ Pegasi	2.5	21 27	135
μ Pegasi α Andromedæ	3.7	21 47	152
δ Andromedæ	3·5	22 24 22 4I	132
β Trianguli	3.1	23 47	125 112
F =		20 1,	112
			-
	-		
			1
		ľ]
			1
4			
*			

			-			
Star.	Mag. L.S.T.	Az.	Star.	Mag.	L.S.T.	Az.
β Pegasi α Andromedæ α Andromedæ α Arietis α Trianguli α Trianguli α Ταυτί α Ταυτί α Ταυτί α Ταυτί α Εθεπίποτυπ α Geminorum α Geminorum α Geminorum α Geminorum α Geminorum α Coronæ Boreat. α Boötis α Coronæ Boreat. δ Boötis α Coronæ Boreat. δ Herculis α Herculis α Herculis α Herculis α Cygni α Pegasi .	h. m. 3·I	233 225 228 235 199 248 206 205 239 228 244 214 227 241 208 249 259 224 236 222 245 212 240 237 225 226 242 245 233 212 208	α Cephei β Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Persei α Aurigæ ο Ursæ Majoris β Ursæ Majoris α Ursæ Majoris α Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris α Draconis α Draconis γ² Ursæ Minoris ι Draconis γ Draco	2·6 3·3 3·6 2·4 2·5 2·8 3·4 3·2 2·5 3·3 2·4 2·5 3·3 2·4 2·5 3·1 3·1 3·1 3·2 3·2 3·3 3·2 3·3 3·2 3·3 3·3	h. m. 0 53 1 1 39 3 37 4 4 4 4 26 4 53 5 26 6 21 8 13 11 59 12 46 14 35 15 41 16 18 16 47 17 39 18 55 19 59 20 46 21 12 22 48	311 327 302 304 298 307 306 313 292 277 308 299 297 316 331 305 318 289 322

NE. QUADRANT

Star.	Mag.	L.S.T.	Az.
a Auriga o Ursæ Majoris d Ursæ Majoris a Ursæ Majoris y Ursæ Majoris t Ursæ Majoris ursæ Draconis ursæ Valenta u	0.2 3.5 3.3 2.0 2.4 2.5 3.4 1.7 2.3 3.6 3.5 1.7 2.3 2.4 2.5 3.6 3.6 2.4 2.5 3.6 2.4 2.5 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6	h. m. 2 9 4 54 6 10 7 29 7 32 8 29 8 45 9 58 10 32 11 55 12 4 12 53 13 39 14 40 15 44 17 47 18 5 18 41 20 37 21 12 21 23 21 51 22 18 23 40	82 50 69 48 59 64 56 62 43 54 69 37 48 32 57 55 66 53 66

Star.	Mag.	L.S.T.	Az.
		h. m	0
α Arietis	2.2	17	153
ζ Persei	2.9	I 44	118
17 Tauri	3.8	2 33	148
η Tauri	3.0	2 37	149
ι Aurigæ β Tauri	2.9	2 39	114
β Tauri ε Geminorum	1·8 3·2	3 35 5 18	129
α Geminorum	2.0	,	142 116
μ Geminorum	3.2	5 21 5 27	156
β Geminorum	I·2	5 56	129
40 Lyncis	3.3	6 55	109
ε Leonis	3·I	8 30	147
12 Canum Venat.	$2 \cdot 9$	10 14	99
ρ Boötis	3.8	12 28	121
ε Boötis	2.7	13 3	132
α Coronæ Boreal.	2.3	13 55	134
ζ Herculis ε Herculis	3.0	14 31	117
ε Herculis	3.9	14 55	120
μ Herculis	3.2	15 55 16 2	143
γ Lyræ	3·3	16 45	131
β Cygni	3.2	17 46	131
ζ Cygni	3.4	19 14	124
η Pegasi	3.1	20 45	124
ι Pegasi	4.0	20 46	143
β Pegasi	2.5.	2I 2I	132
μ Pegasi	3.7	21 36	147
α Andromedæ	2.2	22 18	128
δ Andromedæ	3·5 3·1	22 37	I22
β Trianguli	9.1	23 44	109
			*
			50
			1
•			
1.			
_			

SW. QUADRANT

NW. QUADRANT

*					111/10		
Star.	Mag.	L. S.T.	Az.	Star.	Mag.	L.S.T.	Az.
η Pegasi β Pegasi β Andromedæ β Andromedæ β Arietis β Trianguli 17 Tauri η Tauri β Tauri β Tauri β Tauri μ Geminorum β Geminorum β Geminorum β Geminorum ε Leonis μ Leonis ε Boötis ρ Boötis β Pegasi μ Herculis γ Lyræ μ Herculis μ Herculis μ Pegasi μ	3·3 2·9 2·7 3·8 2·3 3·2 3·0 3·9 3·5 3·3	h. m. 0 33	236 228 232 238 207 251 211 242 246 231 244 213 251 261 228 239 244 217 243 240 229 245 229 236 217 213	α Cephei β Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Persei α Aurigæ ο Ursæ Majoris β Ursæ Majoris α Ursæ Majoris α Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris α Draconis γ² Ursæ Minoris ι Draconis γ² Ursæ Minoris ι Draconis γ	2.6 3.3 3.4 2.5 3.3 2.4 2.5 3.3 2.4 2.5 3.4 2.5 3.4 2.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3	h. m. 0 47 0 51 1 35 3 33 4 0 4 21 4 49 5 20 6 18 8 13 11 54 12 44 14 22 14 29 15 11 15 37 16 15 16 44 17 32 18 38 18 51 19 53 20 39 21 10 22 40	312 328 303 305 300 308 307 314 294 278 310 312 296 303 300 298 317 332 306 311 319 291 323

Star. L.S.T. Mag. Az. h. m. 0 a Auriga... 0.2 2 10 80 o Ursæ Majoris 3·3 3·3 4 59 *6 13* 49 *67* θ Ursæ Majoris α Ursæ Majoris 2.0 7 35 47 . 7 8 β Ursæ Majoris 2.4 36 58 63 γ Ursæ Majoris δ Ursæ Majoris 32 2.5 56 8 3.4 49 ε Ursæ Majoris 58 1.7 9 29 ζ¹ Ursæ Majoris 60 2.4 10 I α Draconis 3.6 10 39 41 L Draconis 11 59 52 3.2 γ² Ursæ Minoris 12 17 26 3·1 Draconis η Draconis ζ Draconis 12 58 48 2.9 13 46 14 42 3.2 39 γ Draconis δ Draconis 2.4 68 15 52 36 3.2 α Cephei ... 2.6 17 53 47 β Cephei ... 3.3 18 16 30 ζ Cephei ... 3.6 18 46 56 β Cassiopeiæ 2.4 20 42 54 α Cassiopeiæ 21 15 2.5 59 γ Cassiopeiæ 21 28 2.3 51 δ Cassiopeiæ 2.8 21 56 51 ε Cassiopeiæ 22 24 44 65 3.4 γ Persei ... 23 43 3.1

Star.	Mag.	L.S.T.	Az.
α Arietis ζ Persei η Tauri η Tauri β Tauri ε Geminorum μ Geminorum β Geminorum δ Ge	2·2 2·9 3·8 3·0 1·8 3·2 3·2 1·2 3·5 3·3	h. m. 0 55 1 41 2 24 2 28 3 31 5 11 5 15 5 52 6 19 6 53	148 116 143 144 126 138 150 126 154
E Leonis ρ Boötis ε Boötis α Coronæ Boreal. ζ Herculis ε Herculis β Herculis β Herculis μ Herculis μ Cygni ζ Cygni ζ Cygni μ Pegasi η Pegasi μ	3·3 3·1 3·8 2·7 2·3 3·0 3·9 2·8 3·5 3·2 3·5 3·7 2·5 3·7 2·5 3·7 2·5 3·7	8 22 12 25 12 58 13 50 14 29 14 52 15 37 15 47 17 41 19 10 20 38 20 41 21 15 21 27 22 13 22 33 23 42	107 142 118 129 130 115 117 156 139 128 128 121 139 142 125 119 107
	9		

SW. QUADRANT

Star.	Mag.	L.S.T.	Az.		Star.	Mag.	L.S.T.	Az.
μ Pegasi β Pegasi β Pegasi β Andromedæ β Trianguli β Trianguli Γαυτί β Tauri β Tauri β Tauri β Geminorum β Geminorum β Geminorum β Geminorum β Geminorum ε Boötis β Boötis β Boötis β Herculis β Herculis β Herculis β Herculis β Herculis β Cygni β Cygni β Cygni β Cygni β Cygni β Pegasi β Pegasi	3·1 3·3 2·7 3·8 2·8 3·2 3·0 3·9 3·5 3·2 3·4	h. m. 0 5 0 37 0 44 1 555 2 37 3 11 4 28 4 56 4 58 5 57 7 11 7 21 8 7 8 11 9 28 11 0 11 39 16 24 16 31 17 12 17 17 18 37 18 47 19 2 21 13 23 8 23 28	218 239 231 235 241 212 253 217 216 244 234 210 222 206 234 218 253 231 242 229 204 221 245 243 232 232 232 232 232 232		β Cephei α Cephei ζ Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ δ Cassiopeiæ α Aurigæ ο Ursæ Majoris θ Ursæ Majoris α Ursæ Majoris α Ursæ Majoris α Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris α Draconis γ² Ursæ Minoris ι Draconis γ Draconis γ Draconis γ Draconis γ Draconis γ Draconis δ Draconis γ D	3·3 2·6 3·6 2·4 2·5 2·3 3·4 2·0 3·3 2·4 2·5 3·4 2·5 3·4 2·5 3·4 2·5 3·4 2·5 3·4 2·5 3·4 2·5 3·4 2·5 3·4 2·6 3·6 3·1 2·6 3·6 3·1 3·2 3·2 3·2 3·2 3·3 3·3 3·3 3·3	h. m. 0 40 0 42 1 30 3 28 3 57 4 16 4 44 5 14 6 15 8 12 11 49 12 41 14 18 14 23 16 11 17 26 18 25 18 47 19 48 20 32 21 8 22 32	330 313 304 306 301 309 316 293 302 313 297 304 302 300 319 334 308 312 321 292 324
1	1	l	!	3				

Mag. Star. L.S.T. Az. m. α Aurigæ o Ursæ Majoris 2 12 0.279 3·3 3·3 48 5 5 6 16 θ Ursæ Majoris 66 β Ursæ Majoris α Ursæ Majoris 2.4 56 7 40 45 62 2.0 7 41 8 35 γ Ursæ Majoris 2.5 8 Ursæ Majoris 8 53 3.4 55 ε Ursæ Majoris 1.7 9 57 33 ζ¹ Ursæ Majoris 2.4 10 59 α Draconis 10 46 3.6 40 L Draconis 3.2 12 51 Draconis 46 38 65 *67* 13 4 2.9 Draconis 3.2 13 54 β Draconis 3.0 14 17 γ Draconis δ Draconis 2.4 14 45 3.2 16 1 ••• 35 α Cephei ... ••• 2.6 17 59 45 Cephei ... 18 27 3.3 29 Cephei ... 18 50 3.6 54 β Cassiopeiæ 52 58 2.4 20 47 α Cassiopeiæ 2.5 21 19 γ Cassiopeiæ 2.3 21 33 49 δ Cassiopeiæ 2.8 22 50 ε Cassiopeiæ 3.4 22 31 43 γ Persei ... 3.1 23 46

Star. Mag. L.S.T. Az. α Arietis 2·2 0 46 143 β Arietis 2·7 1 5 158 17 Tauri 3·8 2 16 139 η Tauri 1·8 3 27 123 ζ Tauri 3·0 4 36 153 μ Geminorum 3·2 5 5 145 ξ Geminorum 3·2 5 5 145 ξ Geminorum 3·2 5 5 145 ξ Geminorum 3·2 5 47 123 δ Geminorum 3·3 6 51 105 ξ Leonis 3·3 6 51 105 ξ Leonis 2·6 9 32 159 ξ Leonis 2·6 9 32 159 ξ Leonis 2·6 9 32 159 ξ Leonis 2·7 12 53 126 α Coronæ Boreal 2·3 13 45 127 ξ Herculis 3·9 14 49 115 ξ Leonis 2·8 15 25 150 ξ Herculis 3·2 15 40 135 μ Herculis 3·2 17 36 125 ζ Cygni 3·3 19 6 118 μ Pegasi 3·1 20 37 118 μ Pegasi 3·7 21 20 138 α Andromedæ 2·2 22 8 122 3 41 105 41 41 41 41 41 41 41 4
α Arietis 2·2 0 46 143 β Arietis 2·7 1 5 158 17 Tauri 3·8 2 16 139 η Tauri 3·0 2 20 139 β Tauri 3·0 4 36 153 μ Geminorum 3·2 5 5 145 ε Geminorum 3·2 5 5 134 β Geminorum 1·2 5 47 123 δ Geminorum 3·5 6 8 148 40 Lyncis 3·3 6 51 105 ε Leonis 3·1 8 15 138 γ¹ Leonis 2·6 9 32 159 δ Leonis 2·6 9 32 159 δ Leonis 2·6 10 15 154 ρ Boötis 2·7 12 53 126 α Coronæ Boreal 2·3 13 45 127 ε Herculis 3·2 15 40 135 μ Hercul

			<u> </u>
Star.	Mag.	L.S.T.	Az.
μ Pegasi γ Pegasi β Pegasi δ Andromedæ δ Andromedæ κ Arietis β Trianguli 17 Tauri γ Tauri β Geminorum ε Geminorum δ Geminorum δ Geminorum ε Heonis ε Leonis ε Leonis ε Leonis ε Leonis ε Herculis β Herculis γ Herculis	3·7 3·1 2·5 2·2 2·7 3·5 2·3 3·0 3·8 3·2 3·5 2·6 3·1 2·8 2·8 2·8 2·8 3·9 3·4 4·0	h. m 0 12 0 41 0 50 2 35 2 41 3 20 4 29 5 6 30 7 15 7 31 8 13 8 22 9 33 10 58 11 7 12 5 16 29 16 34 17 17 17 30 18 44 19 5 19 34 21 18 23 12 23 35	222 244 238 202 244 217 255 221 220 207 237 215 226 212 237 201 222 206 234 244 233 211 225 245 235 225 245 225
			-

			•
Star.	Mag.	L.S.T.	Az.
β Cephei α Cephei α Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ α Cassiopeiæ α Aurigæ ο Ursæ Majoris β Ursæ Majoris α Ursæ Majoris α Ursæ Majoris α Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris α Draconis α Dr	3.3 2.6 3.6 2.4 2.5 2.8 3.4 2.5 3.3 2.4 2.5 3.3 2.4 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5	h. m. 0 29 0 35 1 26 3 23 3 53 4 11 4 39 5 7 6 12 8 10 11 43 12 38 14 14 17 15 5 15 29 16 7 16 37 17 18 18 42 19 42 20 24 20 41 21 5 22 23	331 315 306 308 302 311 310 317 296 231 304 315 298 305 301 320 309 314 322 295 293 325

LATITUDE 48° NORTH.

NE. QUADRANT

SE. QUADRANT

-					
	Star.	Mag.	L. S.T.	Az.	
	a Auriga o Ursæ Majoris d Ursæ Majoris a Ursæ Majoris a Ursæ Majoris t Ursæ Majoris c Ursæ Majoris a Draconis p Draconis p Draconis p Draconis c Cephei c Cephei c Cassiopeiæ d Cassiopeiæ c Cassiopeiæ c Cassiopeiæ p Persei	0.2 3.5 3.3 2.4 2.5 3.4 2.5 3.6 3.6 2.4 3.6 3.6 2.5 3.6 2.5 3.6 3.6 3.7 3.6 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7	h. m. 2 13 5 11 6 19 7 44 7 47 8 39 8 58 9 37 10 53 12 9 13 10 14 20 14 47 16 10 18 5 18 38 18 54 20 51 21 23 22 38 23 49	9 77 46 65 55 44 66 58 39 50 45 53 66 33 44 27 53 56 49 42 62	444

í	-		<u> </u>		1
	Star.	Mng.	L.S.T.	Az.	
	Pegasi γ Pegasi γ Pegasi α Andromedæ δ Andromedæ α Arietis α Arietis γ Tauri γ Tauri γ Tauri γ Tauri μ Geminorum δ Geminorum δ Geminorum δ Geminorum α Boōtis α Boōtis α Boōtis α Boōtis α Boōtis γ Herculis α Coronæ Boreal. β Herculis α Herculis α Herculis α Pegasi α Peg	Mng. 3.7 3.1 2.5 2.2 3.5 2.7 2.2 3.1 3.8 3.0 3.0 3.8 3.2 3.5 1.2 2.6 3.1 2.6 0.2 2.7 3.8 3.9 2.8 3.9 3.9 2.8 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9	h. m. 0 19 0 44 0 54 2 43 2 48 3 28 4 31 5 11 5 13 6 40 7 19 7 39 8 19 8 31 9 37 11 12 11 13 12 16 15 0 16 34 16 37 17 1 17 22 17 39 18 50 19 38 21 22 23 15 23 41	0 226 244 237 240 246 208 222 257 225 224 212 240 220 217 239 208 226 212 203 237 247 201 236 215 229 238 238 244 229	

Star.	Mag.	L. S.T.	Az.	
β Cephei α Cephei β Cassiopeiæ α Cassiopeiæ δ Cassiopeiæ δ Cassiopeiæ α Cassiopeiæ α Aurigæ α Ursæ Majoris α Ursæ Majoris α Ursæ Majoris α Ursæ Majoris ε Ursæ Majoris α Draconis	3.36 3.46 3.42 3.43 3.40 3.53 2.53 2.53 2.54 3.59 2.53 2.53 2.53 2.54 2.53 2.54 2.53 2.54 2.54 2.54 2.54 2.54 2.54 2.54 2.54	h. m. 0 18 0 29 1 22 3 19 3 49 4 6 4 34 5 0 6 9 11 37 12 35 14 10 14 11 15 1 15 24 16 3 17 11 18 37 19 36 20 38 21 3 22 14	333 316 307 309 304 311 318 298 283 314 295 305 306 306 304 302 321 315 323 296 294 327	

NE. QUADRANT SE. QUADRANT

Star.	Mag.	L. S.T.	Az.
a Auriga o Ursæ Majoris θ Ursæ Majoris β Ursæ Majoris α Ursæ Majoris δ Ursæ Majoris δ Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris α Draconis α Draconis η Draconis γ Draconis γ Draconis γ Draconis β Craconis α Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Persei	0.2 3.5 3.3 2.4 2.0 2.5 3.4 1.7 2.4 3.6 3.5 2.9 3.0 2.4 2.6 3.3 3.6 2.8 3.1	h. m. 2 15 5 17 6 21 7 48 7 53 8 42 9 41 10 13 11 0 12 14 13 16 14 10 14 23 14 50 16 19 18 11 18 50 18 59 20 56 21 27 21 43 22 11 22 44 23 52	76 45 63 54 43 59 52 54 56 37 49 44 35 64 32 43 25 51 50 55 46 47 40 61
ı			•

Star.	Mag.	L. S.T.	Az.
•		h. m.	0
α Arietis	2.2	0 32	135
β Arietis	2.7	0 41	146
17 Tauri	3.8	2 4	132
η Tauri	3.0	2 7	132
β Tauri	1.8	3 19	117
ε Tauri	3.6	3 31	154
ζ Tauri	3.0	4 17	143
μ Geminorum ε Geminorum	3.2	4 51	·137
β Geminorum	3·2	4 54	127
δ Geminorum	3.2	5 39	139
40 Lyncis	3.3	5 52 6 48	100
ε Leonis	3.1	8 3	131
γ^1 Leonis	2.6	9 8	147
δ Leonis	2.6	9 55	144
ρ Boötis	3.8	12 16	111
ε Boötis	2.7	I2 44	120
η Boötis	2.8	13 1	156
α Boötis	0.2	13 13	151
α Coronæ Boreal.	2.3	13 36	122
β Herculis	2.8	15 7	141
γ Herculis	3.8	15 22	153
δ Herculis	3.2	15 29	128
μ Herculis	3.5	15 44	119
β Cygni ζ Cygni	3·2 3·4	17 28 19 0	119 113
i Pegasi	4.0	20 20	128
η Pegasi	3.1	20 20	113
β Pegasi	2.5	21 2	120
μ Pegasi	3.7	21 8	131
α Andromedæ	2.2	22 I	117
β Trianguli	<i>3</i> · <i>1</i>	23 38	101
			ŀ
			l
			•
17.			
			-
<u>(</u>)		15	
			1
			- 1
	.0		
•			

Star.	Mag.	L. S.T.	Az.	
μ Pegasi η Pegasi β Pegasi α Andromedæ β Arietis α Arietis β Trianguli 17 Tauri η Tauri ζ Tauri ζ Tauri β Tauri μ Geminorum	3·7 3·1 2·5 2·2 2·7 2·2 3·1 3·8 3·6 3·0 1·8	h. m. 0 24 0 47 0 58 2 7 2 59 3 34 4 32 5 16 5 17 5 19 6 49 7 23 7 45	229 247 240 243 214 225 259 228 206 228 217 243 223	
E Geminorum δ Geminorum β Geminorum ε Leonis γ¹ Leonis η Boōtis α Boötis ε Boötis γ Herculis α Coronæ Boreal. β Herculis δ Herculis μ Herculis μ Herculis β Cygni ζ Cygni	3·2 3·5 1·2 3·1 2·6 2·6 2·8 0·2 2·7 3·8 2·3 2·8 3·2 3·5 3·2	8 24 8 38 9 41 11 19 11 22 12 25 14 41 15 12 16 38 17 14 17 26 17 47 18 55 19 42 21 26	233 221 242 229 213 216 204 209 240 207 238 219 232 241 241	
ζ Cygni ι Pegasi	3.4	23 18 23 46	247	
		•		

			 _
Star.	Mag.	L. S.T.	Az.
		h. m.	0
β Cephei	3.3	0 6	335
α Cephei	2.6	0 23	317
ζ Cephei β Cassiopeiæ	3.6	I 17	309
β Cassiopeiæ α Cassiopeiæ	2·4 2·5	3 14	310
γ Cassiopeiæ	2.3	3 45 4 I	305 314
δ Cassiopeiæ	2.8	4 29	313
ε Cassiopeiæ	3.4	4 54	320
γ Persei	3.1	6 6	299
α Aurigæ o Ursæ Majoris	0.2	8 7	284
θ Ursæ Majoris	3.3	11 31	315
α Ursæ Majoris	2.0	14 5	297 317
β Ursæ Majoris	2.4	14 6	306
γ Ursæ Majoris	2.5	14 58	301
δ Ursæ Majoris	3.4	15 20	308
ε Ursæ Majoris ζ¹ Ursæ Majoris	1.7	15 59 16 29	306
α Draconis	3·6	16 29 17 4	304 323
ι Draconis	3.5	18 32	311
η Draconis	2.9	19 30	316
ζ Draconis	3.2	20 8	325
β Draconis γ Draconis	3.0	20 35	297
γ Draconis δ Draconis	3·2	2I O 22 5	296 328
	5 -	22 3	320
		1	
1 (4)			
	1	- 1	
	- 6		
			,
		*	
		*	
	8		

NE. QUADRANT

Star.	Mag.	L. S.T.	Az.
a Auriga o Ursæ Majoris d Ursæ Majoris a Ursæ Majoris a Ursæ Majoris t Ursæ Majoris t Ursæ Majoris a Draconis t Draconis t Draconis β Draconis β Draconis α Cephei ζ Cephei ζ Cassiopeiæ α Cassiopeiæ α Cassiopeiæ γ Persei γ Persei	0.2 3.5 3.3 2.4 2.0 2.5 3.4 1.7 2.4 3.5 2.9 2.3 2.6 3.4 2.5 2.3 2.8 3.4 3.1	h. m. 2 16 5 23 6 24 7 52 7 59 8 46 9 7 9 45 10 17 11 9 12 19 14 26 14 53 16 28 18 17 19 4 21 1 21 31 21 49 22 17 22 51 23 55	74 44 62 52 41 58 51 53 55 66 47 43 44 63 30 41 50 49 54 45 46 30

SE. QUADRANT

Star.	Mag.	L. S.T.	Az.
α Arietis β Arietis 17 Tauri η Tauri β Tauri ε Tauri	2·2 2·7 3·8 3·0 1·8 3·6	h. m. 0 27 0 33 1 59 2 2 3 16 3 21	131 142 129 129 115
ζ Tauri μ Geminorum ε Geminorum β Geminorum δ Geminorum ε Leonis γ¹ Leonis δ Leonis	3·0 3·2 1·2 3·5 3·1 2·6	4 45 4 50 5 37 5 45 7 58 9 0	139 133 124 116 135 128 143
ε Boötis η Boötis α Boötis α Coronæ Boreal. β Herculis γ Herculis	2·6 2·7 2·8 0·2 2·3 2·8 3·8	9 48 12 41 12 49 13 4 13 33 15 1 15 12	140 118 150 146 119 137
δ Herculis μ Herculis β Cygni ζ Cygni ι Pegasi β Pegasi μ Pegasi	3·2 3·5 3·2 3·4 4·0 2·5	15 25 15 41 17 25 18 58 20 16 20 59 21 3	125 117 117 111 125 118 128
α Andromedæ	2.2	21 3 21 59	115
	.2		4

			
Star.	Mag.	L. S.T.	Az.
# Pegasi #### Pegasi #############################	3.7 2.5 2.2 2.7 2.2 3.8 3.0 3.0 3.0 3.0 3.1 2.6 2.8 3.2 3.1 2.6 2.8 3.2 3.3 3.3 3.3 3.4 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4	h. m. 0 29 1 1 2 9 3 7 3 40 5 21 5 24 5 27 6 56 7 26 7 26 7 51 8 28 8 45 9 43 11 24 11 30 12 32 14 53 15 20 16 41 17 24 17 29 17 53 18 59 19 45 21 29 23 20 23 50	232 242 245 218 229 231 231 221 245 227 236 225 244 232 217 220 210 214 242 213 241 223 241 242 243 243 249 235

			,
Star.	Mag.	L. S.T.	Az.
α Cephei ζ Cephei β Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Persei α Aurigæ ο Ursæ Majoris θ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris α Draconis γ Draconis .	2.6 3.6 2.4 2.5 2.3 2.8 3.4 3.1 0.2 3.5 3.2 3.4 3.5 2.9 3.5 3.2 3.0 2.4 3.5 2.9 3.0 2.4 3.0 2.4 3.0 2.4 3.0 2.6 3.0 2.6 3.0 2.6 3.0 2.6 3.0 2.6 3.0 2.6 3.0 2.6 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	h. m. 0 17 1 12 3 9 3 41 3 55 4 23 4 47 6 3 8 6 11 25 12 30 13 59 14 54 15 15 16 56 18 27 19 59 20 32 20 57 21 56	319 310 311 306 315 314 321 300 286 316 298 307 305 324 317 326 299 297 330

NE. QUADRANT

			 1
Star.	Mag.	L. S.T.	Az.
α Persei	1.9 0.2 3.5 3.3 2.4 2.0 2.5 3.4 1.7 2.4 1.9 3.5 2.9 3.6 3.6 3.4 2.5 3.6 3.4 2.5 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6	h. m. 0 22 2 18 5 29 6 28 7 57 8 6 8 50 9 12 9 50 10 21 10 46 11 17 12 25 13 29 14 28 14 29 14 56 16 39 18 24 19 9 21 7 21 36 22 23 22 59 23 59	65 73 42 60 51 39 56 49 51 53 65 34 46 41 32 59 61 28 49 47 52 43 44 37 58

Star. Mag. L.S.T. Λz. μ Pegasi 3·7 0 33 235 β Pegasi 2·5 1 4 245 α Andromedæ 2·2 2 12 248 β Arietis 2·2 3 14 222 α Arietis 2·2 3 44 232 α Tauri 1·1 5 13 200 17 Tauri 3·8 5 25 234 η Tauri 3·0 5 28 234 ε Tauri 3·6 5 36 216 ζ Tauri 3·6 5 36 216 ζ Tauri 3·0 7 2 225 β Tauri 3·0 7 2 225 β Tauri 3·0 7 2 225 β Tauri 3·2 7 56 230 ε Geminorum 3·2 8 31 238 δ Geminorum 3·5 8 50 228
μ Pegasi 3·7 0 33 235 β Pegasi 2·5 1 4 245 α Andromedæ 2·2 2 12 248 β Arietis 2·7 3 14 222 α Arietis 2·2 3 44 232 α Tauri 1·1 5 13 200 17 Tauri 3·8 5 25 234 η Tauri 3·0 5 28 234 ε Tauri 3·6 5 36 216 ζ Tauri 3·0 7 2 225 β Tauri 3·2 7 56 230 ε Geminorum 3·2 8 31 238 δ Geminorum 3·2 8 50 228 β Geminorum 1·2 9 46 247 ε Leonis 2·6 11 38 222 δ Leonis 2·6 12 38 224
β Cygni 3·2 21 32 246 ζ Cygni 3·4 23 22 251 ι Pegasi 4·0 23 54 237

	- 1		
Star.	Mng.	L. S.Ť.	Az.
α Cephei ζ Cephei β Cassiopeiæ γ Cassiopeiæ δ Cassiopeiæ ε Cassiopeiæ γ Persei α Persei α Versæ Majoris θ Ursæ Majoris β Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris ξ Ursæ Majoris τ Ursæ Majoris κ Ursæ Majoris κ Ursæ Majoris π Ursæ Majoris π Ursæ Majoris π Draconis γ Draconis ζ Dra	2.6 3.6 2.4 2.5 2.8 3.4 1.9 2.5 3.3 2.0 2.4 2.5 3.4 1.7 2.4 1.9 3.5 3.2 2.4 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2	h. m. 0 10 1 7 3 3 3 36 3 48 4 17 4 39 5 59 6 16 8 4 11 19 12 26 13 52 13 57 14 50 15 10 16 42 16 47 18 21 19 50 20 29 20 54 21 45	320 311 313 308 317 316 323 302 295 287 318 300 321 309 304 311 309 328 301 299 328 301 299 332
			40

•						
	Star.	Mag.	L. S.T.	Az.		
	γ Persei α Persei α Persei α Aurigæ ο Ursæ Majoris θ Ursæ Majoris β Ursæ Majoris α Ursæ Majoris γ Ursæ Majoris ε Ursæ Majoris τυσε Μαjoris α Draconis το Draconis το Draconis το Draconis γ Draconis γ Draconis α Cephei το Cephei το Cassiopeiæ α Cassiopeiæ α Cassiopeiæ το Cassiopei	3·5 2·9 3·0 3·2 2·4 3·2 2·6 3·6 2·4 2·5	h. m. 0 3 0 24 2 20 3 4 5 36 6 0 6 31 8 2 8 13 8 54 9 17 9 55 10 49 11 25 12 31 13 36 14 33 14 37 14 59 16 50 18 31 19 14 21 12 21 41 22 2 22 29 23 6	57 64 7 7 3 4 1 6 6 5 9 4 9 8 5 5 8 4 5 6 4 6 5 9 4 9 8 5 5 8 4 6 6 5 4 4 3 3 6 6 6 6 7 4 6 6 6 6 6 6 6 6 6 6 6 6 6 6	•	ΑΑΤΤΤΤΤΤGGGGLLLLLBBCHHSHACCLPPA

NW. QUADRANT

Star.	Mag.	L. S.T.	Az.	
		h. m.	0	
Pegasi A Pegasi A Andromedæ A Arietis Tauri Tauri Tauri Tauri Tauri Tauri Tauri Tauri Geminorum Geminorum Geminorum Geminorum Beminorum Geminorum Geminorum	3.7 2.2 2.7 2.2 3.9 1.1 3.0 6.0 9.2 2.3 3.1 3.1 3.1 3.2 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	0 37 1 6 2 14 3 20 3 48 4 59 5 26 5 29 5 32 5 43 7 7 30 8 35 8 35 8 35 8 35 9 48 11 44 12 0 12 43 15 35 16 43 17 34 17 40 18 4 19 50 21 22 21 34 23 23 23 57	238 247 250 225 235 201 207 237 220 228 233 241 231 249 238 225 204 228 219 222 205 246 221 230 240 248 268 273 240 240 240 240 240 240 240 240 240 240	
		÷		
	÷	•		

Star. Mag. L.S.T. Az. α Cephei 2.6 0 3 322 ζ Cephei 3.6 1 2 312 β Cassiopeiæ 2.4 2 58 314 α Cassiopeiæ 2.5 3 31 309 γ Cassiopeiæ 2.8 4 11 317 ε Cassiopeiæ 2.8 4 11 317 ε Cassiopeiæ 3.4 4 32 324 γ Persei 3.1 5 55 303 α Persei 1.9 6 14 296 α Aurigæ 0.2 8 2 289 β Aurigæ 2.1 8 44 287 ο Ursæ Majoris 3.1 11 2 394 θ Ursæ Majoris 3.1 11 2 394 θ Ursæ Majoris 2.0 13 45 322 β Ursæ Majoris 2.4 13 52 311 γ Ursæ Majoris 2.5 14 46 305 δ Ursæ Majoris 2.4 15 5 312 ε Ursæ Majoris 2.4 15 5 312 ε Ursæ Majoris 2.7 15 45 η Ursæ Majoris 2.7 16 17 308 η Ursæ Majoris 2.9 19 10 321 ζ Draconis 3.5 18 15 315 η Draconis 3.9 19 41 330 β Draconis 3.9 2.9 γ Draconis 3.9 2.1 γ Draconis 3.9 3.1 γ Dra				
α Cephei 2.6 0 3 322 ζ Cephei 3.6 I 2 312 β Cassiopeiæ 2.4 2 58 314 α Cassiopeiæ 2.5 3 31 309 γ Cassiopeiæ 2.8 4 II 317 ε Cassiopeiæ 3.4 4 32 324 γ Persei 3.1 5 55 303 α Persei 1.9 6 14 296 α Aurigæ 0.2 8 2 289 β Aurigæ 0.2 8 2 289 β Aurigæ 0.2 8 2 289 β Aurigæ 0.2 1 8 44 287 ο Ursæ Majoris 3.5 II 12 319 υ Ursæ Majoris 3.3 I2 23 301 α Ursæ Majoris 2.4 I3 52 311 <	Star.	Mag.	L. S.T.	Az.
	Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Persei α Persei α Persei α Aurigæ α Aurigæ α Aurigæ α Ursæ Majoris α Ursæ Majoris α Ursæ Majoris γ Ursæ Majoris α Ursæ Majoris α Ursæ Majoris α Draconis ι Draconis ι Draconis γ Draconis β Draconis β Draconis β Draconis	3.6 2.4 2.5 2.8 3.4 3.1 1.9 0.2 2.1 3.5 3.1 3.3 2.4 2.5 3.4 1.7 2.4 1.9 3.5 3.5 3.5 3.6 3.7 2.4 2.5 3.6 3.7 2.4 2.5 3.6 3.7 2.4 2.5 3.7 2.4 2.5 3.7 2.6 3.7 2.7 2.7 2.7 2.7 2.7 2.7 2.7 2	0 3 1 2 2 58 3 31 3 42 4 11 4 32 5 55 6 14 8 2 8 44 11 12 21 48 12 23 13 45 13 52 14 46 15 5 16 17 16 39 16 39 18 15 19 10 19 41 20 25 20 51	322 312 314 309 318 317 324 303 296 289 287 319 294 301 322 311 305 312 310 308 296 327 315 321 330 302 300

Star.	Mag.	L.S.T.	Az.
		h. m.	0
Persei A Persei A Persei A Aurigæ B Aurigæ O Ursæ Majoris Ursæ Majoris Ursæ Majoris B Ursæ Majoris A Ursæ Majoris Y Ursæ Majoris S Ursæ Majoris Ursæ Majoris Ursæ Majoris Ursæ Majoris Ursæ Majoris Ursæ Majoris Draconis Draconis Draconis Draconis Y Cephei Y Cassiopeiæ	3·1 1·9 2·2 3·3 3·4 2·0 3·4 2·0 3·5 3·6 3·5 3·2 2·4 3·6 3·2 2·6 3·6 3·6 3·6 3·6 3·6 3·7 2·6 3·6 3·7 3·6 3·7 3·6 3·7 3·6 3·7 3·6 3·7 3·7 3·7 3·7 3·7 3·7 3·7 3·7	0 6 0 27 2 22 3 6 5 42 6 34 8 7 8 20 8 58 9 22 9 59 10 52 11 35 12 37 13 43 14 36 15 2 16 54 17 3 18 38 19 19 21 17 21 45 22 34 23 14	55 62 70 72 39 65 58 48 57 52 31 43 38 57 28 59 72 44 49 41 42 34

Star.	Mag.	L. S.T.	Az.
α Arietis β Arietis η Piscium? 17 Tauri η Tauri ε Tauri γ Tauri α Tauri α Tauri β Geminorum ε Geminorum β Geminorum γ Geminorum β Geminorum	2·2 2·7 3·7 3·8 3·0 3·6 3·9 1·1 3·0 3·2 3·2 1·9 3·5	h. m. 0 14 0 15 0 38 1 48 1 51 2 58 3 20 3 26 3 54 4 31 4 40 5 27 5 31	Az. 0 123 131 156 121 121 136 153 148 129 124 117 147 126
E Leonis γ¹ Leonis δ Leonis θ Leonis μ Boötis β Herculis γ Herculis γ Herculis γ Herculis γ Perculis μ Herculis μ Herculis μ Pegasi 3·1 2·6 3·4 2·8 2·8 3·9 3·5 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9	7 47 8 41 9 32 10 9 10 54 12 26 12 43 14 45 14 50 14 52 15 14 16 28 17 18 19 39 20 52 21 52 22 13	119 132 129 150 155 137 135 127 135 150 117 110 159 110 152 117 120 108 156	
γ Pegasi	2.9	23 20	156

Az.

SW. QUADRANT

		•			
Star.	Mag. L.	S.T. Az.	Star.	Mag.	L. S.T.
c Pegasi μ Pegasi γ Pegasi γ Pegasi γ Pegasi γ Piscium β Arietis γ Tauri γ Tauri γ Tauri γ Tauri γ Tauri γ Geminorum β Geminorum β Geminorum β Geminorum β Geminorum γ Geninorum γ Geminorum γ Heroulis γ Herculis γ Herculis γ Herculis γ Delphini α Delphini α Pegasi	2.8 15 0.2 15 3.9 16 3.8 17 3.5 17 2.8 18 3.2 19 3.5 19 3.9 21	40 240 58 204 8 250 16 204 25 229 52 237 10 207 32 239 35 239 36 212 50 224 12 231 39 213 5 236 38 243 59 221 49 228 11 20 36 223 41 225 48 223 41 225 54 201 9 233 10 243 52 250	Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Persei α Persei α Aurigæ ο Ursæ Majoris ο Ursæ Majoris ο Ursæ Majoris α Ursæ Majoris α Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris ο Draconis ο Draconis ο Draconis ο Oraconis ο Ο Oraconis ο Ο Oraconis ο Ο Oraconis ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο Ο	3.6 2.4 2.5 2.3 2.8 3.4 3.1 3.0 2.4 2.5 3.4 1.7 2.4 3.0 2.4 3.5 3.0 2.4 3.0 3.0 2.4 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	h. m. 0 57 2 53 3 27 3 36 4 24 5 52 6 8 42 6 11 46 12 20 13 38 13 47 14 42 15 41 16 13 16 29 16 36 18 9 19 32 20 48 21 21 22 30 23 56
				•	

Star.	Mag.	L.S.T.	Az.
γ Persei	3·1 1·9 3·1 3·2 3·3 2·4 2·5 3·4 1·9 3·5 2·9 3·6 3·6 3·4 2·5 3·4 2·5 3·6 3·6 3·4 2·5 3·4 2·6 3·6 3·6 3·6 3·7 4 2·7 3·7 4 3·7 4 3·7 4 3·7 4 3·7 4 3·7 4 3·7 4 3·7 4 3·7 4 3·7 4 3·7 4 3·7 4 3·7 4 3·7 4 3·7 4 4 4 4 5 5 5 5 6 6 6 6 7 8 7 8 8 8 8 8 8 8 8 8 8 8 8 8	h. m. o 10 o 30 o 49 2 24 3 8 5 49 6 5 8 8 12 8 28 9 27 10 4 10 34 10 55 11 44 12 43 13 50 14 40 14 57 15 6 16 56 18 46 19 25 21 23 21 50 22 15 22 41 23 23	54 65 67 67 67 67 67 67 67 67 67 67 67 67 67

Star.	Mag.	L. S.T.	Az.
α Arietis β Arietis η Piscium 17 Tauri	2·2 2·7 3·7 3·8	h. m. O 10 O 11 O 27 I 44	120 128 150 118
η Tauri ε Tauri γ Tauri α Tauri	3.0 3.6 3.0	1 44 1 48 2 53 3 11 3 18	118 133 148 143
ζ Tauri μ Geminorum ε Geminorum γ Geminorum δ Geminorum	3·0 3·2 3·2 1·9	3 50 4 27 4 38 5 19	126 121 114 143
ε Leonis γ¹ Leonis δ Leonis θ Leonis	3·5 3·1 2·6 2·6 3·4	5 27 7 44 8 36 9 28 10 i	123 117 129 126 145
β Leonis η Boötis α Boötis β Herculis γ Serpentis	2·2 2·8 0·2 2·8 3·9	10 43 12 21 12 38 14 41 14 44	149 134 131 124 145
γ Herculis δ Herculis α Herculis β $Cygni$	3·8 3·2 3·5 3·2	14 45 15 12 16 16 17 16	132 115 152 108
ζ Aquilæ α Delphini ι Pegasi μ Pegasi α Pegasi	3·0 3·9 4·0 3·7 2·6	18 15 19 29 20 3 20 49 22 2	156 147 115 117
γ Pegasi	2.9	23 11	151
i i	-		14.
r			
			,

Az.

SW. QUADRANT

Star.	Mag.	L. S.T.	Az.		Star.	Mag.	L. S.T.
		h. m.	0			i	h. m.
α Pegasi	2.6	0 0	210	1	ζ Cephei	3.6	0 51
l . Daggari	4.0	0 3	245		β Cassiopeiæ	2.4	2 47
D:	3.7	0 43	243		α Cassiopeiæ	2.5	3 22
1 ' B ' '	2.9		209		γ Cassiopeiæ	2.3	3 29
1 ' D' '	-	, ,	210		δ Cassiopeiæ	2.8	
1 6 4	3·7 2·7	,	232		O de la facilita de la constante de la constan		3 59
	2.2	3 29 3 56		1	. D	3·4 3·1	4 15 5 48
m			240 212		' D:	1.0	5 48
1 ' m ·	3.8	1 - 5	242		% Danasi	3.1	6 25
1 ' m ·	3.0	5 36 5 38	242		4	0.2	7 58
1 'm ·	1.1		217		α Aurigæ β Aurigæ :	2.1	8 40
m	3.6	5 44			o Ursæ Majoris	3.5	10 59
v m ·	_	5 55 7 16	227	\	Ursæ Majoris	3.1	11 43
· ~ ·	1·9	7 16	234		θ Ursæ Majoris	3.3	12 16
γ Geminorum μ Geminorum	3.2	8 9	239		α Ursæ Majoris	2.0	13 30
ε Geminorum	3.2	8 40	246		β Ursæ Majoris	2.4	13 42
δ Geminorum	3.2	9 3	237		γ Ursæ Majoris	2.5	14 38
β Geminorum	1.2	9 52	253		δ Ursæ Majoris	3.4	14 55
ε Leonis	3.1	11 38	243		ε Ursæ Majoris	1.7	15 36
γ¹ Leonis	2.6	11. 24	232		ζ¹ Ursæ Majoris	2.4	16 8
θ Leonis	3.4	12 19	215		α Draconis	3.6	16 20
β Leonis	2.2	12 47	211		η Ursæ Majoris	1.9	16 33
δ Leonis	2.6	12 52	234		Draconis	3.5	18 3
n Boötis	2.8	15 21	226		η Draconis	2.9	18 56
α Boötis	0.2	15 46	229		ζ Draconis	3.2	19 21
γ Serpentis	3.9	17 2	215		β Draconis	3.0	20 18
γ Herculis	3·8	17 51	228		γ Draconis	2.4	20 44
ά Herculis	3.2	18 6	208		δ Cygni	3.0	22 28
β Herculis	2.8	18 13	236		α Cephei	2.6	23 48
δ Herculis	3.2	19 12	245			Ì	
ζ Aquilæ	3.0	19 49	204				
α Delphini ·	3.9	21 43	213				
							;
4.0							
					•		
							ļ
-			-				
						_	
*) i		
. 20			-				
				,			

NE. QUADRANT

SE. QUADRANT

Star.	Mag.	L. S.T.	Az.
	<u>. </u>	h: m.	-
γ Persei	3.1	0 14	52
α Persei	1.9	0 33	59
δ Persei	3.1	0 51	63
α Aurigæ β Aurigæ	$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	2 26 3 10	67
o Ursæ Majoris	3.2		69 36
Ursæ Majoris	3.1	5 56 6 8	62
θ Ursæ Majoris	3.3	6 42	54
β Ursæ Majoris	2.4	8 17	45
α Ursæ Majoris	2.0	8 36	33
γ Ursæ Majoris δ Ursæ Majoris	2.5	96	50
	3.4	9 33	43
ε Ursæ Majoris ζ¹ Ursæ Majoris	1.7	10 10	45
η Ursæ Majoris	2.4	10 39 10 58	47
α Draconis		11 54	59 27
L Draconis	3.2	12 49	40
η Draconis	2.9	13 58	34
β Draconis	3.0	14 44	54
ζ Draconis	3.2	15 9	24
δ Cygni	2.4	15 10	56
1 0 1	3·0 2·6	16 58 18 54	69
α Cephei ζ Cephei	3.6	18 54	33
β Cassiopeiæ	2.4	21 29	43 41
α Cassiopeiæ	, .	21 55	46
γ Cassiopeiæ	2.3	22 22	37
δ Cassiopeiæ	2.8	22 48	38
ε Cassiopeiæ	3.4	23 31	31
]		9	
		1	
		}	
		-	
<u> </u>	ì	<u>'</u>	

NW. QUADRANT

Star.	Mag.	L. S.T.	Az.		Star.
c Pegasi	4.0 2.6 3.7 2.9 3.7 2.2 3.8 3.0 1.1 3.6 3.6 3.1 2.6 3.1 2.6 3.1 2.6 3.8 3.9 3.1 2.6 3.9 3.1 3.0 3.1 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	h. m. 0 5 0 8 0 45 1 15 2 36 3 33 3 59 5 27 5 38 5 41 5 51 6 0 7 20 7 31 7 53 8 11 9 6 11 41 11 58 12 26 12 55 12 56 15 25 17 10 17 55 18 16 19 14 19 59 21 50	247 214 245 213 215 235 242 217 244 221 230 236 205 221 241 239 245 236 229 231 238 213 247 209 217		Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ δ Cassiopeiæ ε Cassiopeiæ ε Cassiopeiæ γ Persei δ Persei δ Persei β Aurigæ ο Ursæ Majo ι Ursæ Majo ι Ursæ Majo γ Ursæ Majo κ Ursæ M
			-	• .	

1			
Star.	Mag.	L. S.T.	Az.
ζ Cephei β Cassiopeiæ α Cassiopeiæ	3·6 2·4 2·5	h. in. 0 46 2 41 3 17	317 319 314
γ Cassiopeiæ δ Cassiopeiæ ε Cassiopeiæ γ Persei α Persei	2·3 2·8 3·4 3·1 1·9	3 22 3 52 4 7 5 44 6 5	323 322 329 308 301
δ Persei α Aurigæ β Aurigæ ο Ursæ Majoris ι Ursæ Majoris	3·I 0·2 2·I 3·5 3·I	6 23 7 56 8 38 10 52 11 40	297 293 291 324 298
 θ Ursæ Majoris α Ursæ Majoris β Ursæ Majoris γ Ursæ Majoris δ Ursæ Majoris ε Ursæ Majoris 	3·3 2·0 2·4 2·5 3·4 1·7	12 12 13 22 13 37 14 34 14 49 15 30	306 327 315 310 317 315
ζ' Ursæ Majoris α Draconis η Ursæ Majoris ι Draconis η Draconis ζ Draconis	2·4 3·6 1·9 3·5 2·9 3·2	16 3 16 10 16 30 17 57 18 48 19 9	313 333 301 320 326
β Draconis γ Draconis δ Cygni α Cephei	3.0 2.4 3.0 2.6	20 14 20 40 22 26 23 40	304 291 327
-			
			·

Star.	Mag.	L. S.T.	Az.
Persei α Persei α Persei α Persei α Aurigæ α Aurigæ ο Ursæ Majoris ι Ursæ Majoris α Ursæ Majoris α Ursæ Majoris α Ursæ Majoris τ Ursæ Majoris τ Ursæ Majoris τ Ursæ Majoris α Draconis ι Draconis ι Draconis ι Draconis τ Draconis α Cephei α Cephei α Cephei α Cassiopeiæ α Cassiopeiæ τ Cassiopei	3·1 1·9 3·1 3·2 2·1 3·5 3·3 2·4 2·5 3·4 2·5 3·4 2·5 3·6 3·5 3·6 3·6 3·6 3·6 3·6 3·6 3·6 3·6	h. m. 0 18 0 36 0 54 2 28 3 12 6 3 6 11 6 46 8 22 8 44 9 11 9 38 10 15 14 48 15 13 17 0 19 36 21 35 22 29 22 255 23 41	51 58 62 65 67 34 60 53 43 31 49 42 44 46 58 25 38 32 52 54 67 31 41 39 45 36 37 29

Star.	Mag.	L. S.T.	Az.
β Arietis α Arietis η Piscium 17 Tauri η Tauri ς Tauri α Tauri α Tauri α Tauri μ Geminorum γ Geminorum δ Geminorum δ Leonis α Leonis δ Leonis η Boötis η Boötis η Boötis γ Serpentis β Herculis γ Herculis α Herculis α Herculis α Ophiuchi ζ Aquilæ α Delphini α Pegasi γ Pegasi γ Pegasi	2·7 2·2 3·8 3·6 3·9 1·9 3·4 2·8 2·8 2·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3	h. m. 0 3 0 5 11 39 1 42 2 44 2 56 3 43 4 22 5 42 8 9 21 9 48 12 29 14 35 14 37 15 59 16 36 17 57 21 47 22 56	123 115 141 113 113 127 136 121 117 136 123 154 121 138 141 128 142 143 152 147 139 142 143
			-

Star.	Mag.	L. S.T.	Az.
α Pegasi γ Pegasi γ Piscium β Arietis α Arietis γ Tauri ταuri α Tauri α Tauri ξ Geminorum ξ Geminorum γ Geminorum α Geminorum α Leonis γ Leonis β Leonis β Leonis β Leonis γ Perculis α Boötis γ Herculis α Herculis α Herculis α Herculis α α Ophiuchi α Delphini α Delphini α	2·6 2·9 3·7 2·2 3·8 3·0 1·1 3·6 3·4 1·9 2·2 2·8 0·2 2·8 2·8 2·9 3·8 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9	h. m. o 15 1 22 2 43 3 37 4 1 5 34 5 54 5 56 6 4 7 23 7 40 7 59 8 14 9 9 56 12 22 12 32 12 59 13 1 15 29 13 1 15 55 17 16 17 59 18 19 18 23 18 26 20 7 21 57	218 217 219 237 245 221 247 224 233 239 210 224 243 242 206 237 222 239 219 232 235 223 234 241 217 208 213 221

Star.	Mag.	L. S.T.	Az.
Cephei β Cassiopeiæ α Cassiopeiæ δ Cassiopeiæ ε Cassiopeiæ α Persei α Persei α Persei α Aurigæ α Aurigæ α Aurigæ α Ursæ Majoris ε Ursæ Majoris α Ursæ Majoris α Ursæ Majoris α Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris α Draconis η Ursæ Majoris α Draconis η Draconis η Draconis η Draconis α Cephei	3.6 2.4 2.5 2.8 3.1 1.9 3.1 2.4 3.5 3.3 2.4 3.4 3.5 3.4 3.5 3.4 3.5 3.6 3.7 2.4 3.6 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7	h. m. 0 40 2 35 3 12 3 15 3 45 3 57 5 40 6 20 7 54 8 36 10 45 11 37 12 8 13 14 13 32 14 29 14 44 15 25 15 58 15 59 16 27 17 51 18 40 20 37 22 24 23 32	319 321 315 324 323 331 309 302 298 295 293 326 300 307 329 317 318 316 314 335 302 322 328 308 306 293 329

Star.	Mag.	L. S.T.	Az.	
Persei	3·1 1·9 3·1 3·2 2·1 3·3 3·2 2·4 2·5 3·4 1·9 3·5 2·4 2·6 3·6 2·4 2·5 3·4 2·5 3·4 2·6 3·6 3·4 2·8 3·4 2·8 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9	h. m. 0 23 0 40 0 57 2 31 3 14 6 12 6 14 6 50 8 25 8 28 8 53 9 16 9 44 10 21 10 49 11 5 13 3 14 14 14 52 17 59 19 42 21 42 22 36 23 2 23 52	49 56 61 64 65 52 59 51 66 41 29 47 40 42 44 56 66 66 29 39 37 43 34 35 66	

Star. Mag. L.S.T. Az.
β Arietis 2.7 0 0 120 η Piscium 3.7 0 5 138 η Tauri 3.6 2 40 124 Υ Tauri 3.6 2 40 124 Υ Tauri 3.9 2 50 136 α Tauri 1.1 3 1 133 ζ Tauri 3.0 3 40 118 μ Geminorum 3.2 4 20 114 γ Geminorum 3.2 4 20 114 γ Geminorum 3.5 5 18 116 ξ Geminorum 3.4 5 33 145 γ¹Leonis¹ 2.6 8 25 120 α Leonis 2.6 8 25 120 α Leonis 2.6 9 18 118 θ Leonis 2.2 10 22 137

SW. QUADRANT NW. QUADRANT

Star.	Mag.	L.S.T.	Az.
α Pegasi γ Pegasi η Piscium β Arietis γ Tauri ε Tauri ξ Geminorum γ Geminorum β Geminorum β Geminorum β Geminorum β Geminorum β Geminorum β Geminorum γ Leonis γ Leonis β Leonis β Leonis γ Heroulis γ Serpentis γ Herculis γ Herculis α Ophiuchi α Ophiuchi α Quilæ ε Delphini α Delphini α Delphini	2.6 2.9 3.7 2.7 3.9 1.1 3.6 3.2 3.4 2.6 3.4 2.6 3.9 3.8 2.8 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9	h. m. 0 22 1 29 2 49 3 40 5 40 6 2 6 8 7 26 7 49 8 4 8 16 9 12 11 6 12 5 12 38 13 2 13 8 13 51 15 58 17 21 18 3 18 22 18 30 18 36 20 15 21 17 22 2	222 221 222 240 224 228 236 242 215 228 246 244 212 240 226 242 223 207 235 238 226 237 243 221 213 218 204 225

Star.	Mag.	L.S.T.	Az.		
Cephei β Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Persei α Persei α Persei α Aurigæ β Aurigæ ο Ursæ Majoris ι Ursæ Majoris α Ursæ Majoris α Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris τυrsæ Majoris α Cysmi α Cygni	3.6 2.4 2.5 2.3 2.8 3.1 3.0 2.1 3.2 2.4 3.2 2.4 3.2 2.4 3.2 3.4 3.2 3.4 3.5 3.6 3.6 3.6 3.7 3.6 3.7 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6	h. m. 0 34 2 28 3 6 3 38 3 46 5 55 5 58 6 17 7 51 8 34 10 36 11 34 12 4 13 26 13 45 14 28 15 53 17 43 18 32 20 22 23 19 23 22	321 323 317 326 325 334 311 304 296 295 328 301 309 331 320 318 316 304 324 330 307 294 331 309 307 294 331		

Star.	Mag.	L.S.T.	Az.
E Cassiopeiae γ Persei δ Persei δ Persei β Aurigæ β Aurigæ ι Ursæ Majoris ο Ursæ Majoris θ Ursæ Majoris β Ursæ Majoris α Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris τ Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris τ Ursæ Majoris α Crysæ	3·4 3·1 1·9 3·1 3·2 2·1 3·5 3·3 2·4 2·5 3·4 1·9 3·5 3·3 2·4 2·5 3·4 1·9 3·6 3·6 4 2·5 3·6 2·6 3·6 3·6 3·6 3·6 3·6 3·6 3·6 3	h. m. 0 3 0 28 0 43 1 0 2 33 3 17 6 20 6 54 8 28 8 34 9 3 9 51 10 27 10 55 11 27 10 55 11 27 15 21 17 5 18 2 19 49 21 49 22 12 22 44 23 9	0 24 47 55 59 64 57 30 64 40 27 48 41 43 55 44 43 55 49 64 64 27 37 35 41 32 33
			10

Star.	Mag.	L. S.T.	Az.
η Piscium η Tauri ε Tauri γ Tauri α Tauri γ Geminorum ξ Geminorum γ Leonis ο Leonis δ Leonis θ Leonis ρ Leonis γ Serpentis γ Herculis γ Herculis α Herculis α Herculis α Pegasi γ Aquilæ γ Aquilæ γ Aquilæ γ Aquilæ γ Aquilæ γ Pegasi α Pegasi γ Pegasi	3.70.6 3.0.6 3	h. m. 0 0 1 38 2 37 2 45 2 56 3 38 4 57 5 26 8 22 8 45 9 38 9 45 10 17 11 56 12 23 14 21 14 30 15 47 16 19 17 43 18 49 19 31 20 58 21 34 22 43 23 57	134 109 122 133 130 116 129 141 118 154 144 116 131 158 134 148 122 119 131 121 114 136 143 139 153 135 150 153 153 153 153 153 153 153 153 153 153

NW. QUADRANT.

Star.	Mag.	L.S.T.	Az.	
α Pegasi	2.6 2.9 3.7 2.7 3.9 1.1 3.6 3.4 2.6 2.2 3.8 2.8 3.9 3.9 3.4 2.6 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9	b. m. 0 27 1 35 2 54 3 43 5 45 6 6 6 11 7 28 7 56 8 9 10 29 11 13 11 14 12 8 12 42 13 5 13 13 14 0 15 37 16 1 17 25 18 6 18 25 18 35 18 43 20 21 20 35 21 27 22 22 23 30	225 225 226 242 227 230 238 244 219 231 206 242 229 244 226 212 238 241 229 244 217 221 207 210 228 201	
	7		•	

			-
Star.	Mag.	L.S.T.	Az.
Cephei β Cassiopeiæ α Cassiopeiæ γ Cassiopeiæ γ Cassiopeiæ γ Persei α Persei α Persei α Aurigæ α Aurigæ α Aurigæ α Aurigæ α Ursæ Majoris α Ursæ Majoris α Ursæ Majoris α Ursæ Majoris γ Ursæ Majoris τυrsæ Majoris α Ursæ Majoris α Coraconis η Draconis η Draconis α Cephei α Cephei α Cygni α Cephei α Cygni α Cyg	3.6 2.4 2.5 2.3 2.8 3.1 1.9 3.1 2.1 3.3 2.0 2.4 3.2 2.5 3.4 1.7 2.4 1.9 3.5 2.9 3.0 2.4 3.0 2.1 3.1 3.1 3.1 3.1 3.1 3.1 3.1 3	h. m. 0 27 2 21 3 0 3 31 3 35 5 30 5 55 6 14 7 49 8 31 10 28 11 31 12 0 12 55 13 20 13 42 14 19 14 31 15 13 15 47 16 20 17 36 18 23 20 1 20 29 22 19 23 13 23 16	323 325 319 328 327 336 313 305 301 296 330 296 314 322 319 317 305 326 332 311 309 296 333 296

LATITUDE 37º NORTH.

NE. QUADRANT

SE. QUADRANT

Star.	Mng.	L.S.T.	Az.
γ Persei	3·1 1·9 3·1 0·2 2·1 3·5 3·3 3·2 2·4 2·0 2·5 3·4 1·7 2·4 1·9 3·5 2·9 3·6 3·6 2·4 2·5 2·3 2·8	h. m. 0 33 0 47 1 3 2 36 3 19 6 20 6 29 6 58 8 30 8 41 9 14 9 26 9 57 10 33 11 0 11 12 13 18 14 32 15 1 15 25 17 7 18 4 19 32 19 56 21 57 22 18 22 53 23 18	46 53 57 61 62 56 28 48 62 38 24 44 36 39 41 53 32 26 47 49 63 62 24 35 33 32 26 47 49 63 62 21 31 32 33 33 33 34 34 34 34 34 35 36 36 36 36 36 36 36 36 36 36 36 36 36
•			

Star. Mag. L.S.T. Az.
η Tauri 3.0 1 36 107 ε Tauri 3.6 2 34 119 γ Tauri 3.9 2 41 130 α Tauri 1.1 2 52 127 ζ Tauri 3.0 3 36 113 γ Geminorum 3.4 5 20 138 β Cancri 3.8 7 19 153 γ¹ Leonis 2.6 8 19 115 ο Leonis 2.6 9 12 114 δ Leonis 2.9 3.4 152 β Leonis 3.9 9 34 152 β Leonis 3.9 9 34 152 β Leonis 3.9 14 16 128

Star.	Mag.	L.S.T.	Az.
α Pegasi	2.6	h. m.	228
_ ~ .	2.9	I 40	228
γ Pegasi η Piscium	3.7	2 59	229
β Arietis	2.7	3 46	245
γ Tauri	3.9	5 49	230
α Tauri	1.1	6 10	233
ε Tauri	3.6	6 14	241
ζ Tauri	3.0	7 30	247
ξ Geminorum	3.4	8 2	222
γ Geminorum	1.9	8 13	234
β Cancri	3.8	9 5	207
o Leonis	3.8	10 37	211
α Leonis	1.3	II 2I	220
ρ Leonis	3.9	11 24	208
γ¹ Leonis	2.6	12 11	245
θ Leonis δ Leonis	3.4	12 47 13 8	232 246
β Leonis	2.2	13 17	229
ε Virginis	3.0	14 8	216
η Boötis	2.8	15 40	240
α Boötis	0.3	16 4	243
γ Serpentis	3.9	17 30	232
κ Opĥiuchi	3.4	17 47	207
γ Herculis	a.0	18 9	· 24I
α Herculis	3.2	18 40	227
α Ophiuchi	ľ	18 49	221
72 Ophiuchi	3.7	18 56	207
ζ Aquilæ	3.0	20 27	225
a Aquilæ	2.8	20 31	212
γ Aquilæ	4.0	20 44 21 35	214
ε Delphini α Delphini	3.9	22 11	231
ε Pegasi	2.5	22 33	207
ζ Pegasi	3.6	23 38	212
S regular	'		
1			
1			
		-	
1			
_	l	<u> </u>	

Star. Mag. L.S.T. Az. h. m. γ Persei 3·I 0 38 44 α Persei 1.9 0 51 52 δ Persei ... 56 6 3·1 Į α Aurigæ ... 59 61 0.2 2 39 β Aurigæ ... 2· I 3 22 L Ursæ Majoris 3·1 6 24 54 o Ursæ Majoris 3.2 6 39 25 θ Ursæ Majoris 7 3 8 33 47 61 3.3 ψ Ursæ Majoris 3.2 β Ursæ Majoris 8 48 2.4 36 Ursæ Majoris Ursæ Majoris 2.5 42 9 32 10 5 3.4 34 E Ursæ Majoris 1.7 10 39 37 ζ¹ Ursæ Majoris 2.4 ΙI 6 39 n Ursæ Majoris 1.9 11 16 51 i Draconis 3·5 3·6 30 72 13 26 n Herculis 14 8 Draconis 2.9 14 45 23 β Draconis 46 3.0 15 6 48 61 Draconis 2.4 15 30 8 Cygni 3.0 17 10 α Cygni ... ζ Cephei ... 1.3 18 61 7 3.6 20 33 4 β Cassiopeiæ 2.4 22 31 α Cassiopeiæ 2.5 22 24 38 γ Cassiopeiæ 2.3 23 27 8 Cassiopeiæ 2.8 23 26 29

			 -
Star.	Mag.	L.S.T.	Az.
α Pegasi γ Pegasi γ Pegasi γ Piscium β Arietis α Tauri α Tauri α Tauri α Tauri α Geminorum γ Geminorum γ Geminorum β Canis Minoris β Cancri α Leonis α Leonis α Leonis α Leonis α Peonis α Peo	2.6 2.9 3.7 3.8 3.9 1.1 3.8 3.8 3.9 3.4 2.2 3.8 3.9 3.4 2.2 3.9 3.4 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9	h. m. 0 36 1 44 3 3 48 4 15 5 53 6 13 6 16 7 32 8 7 8 16 8 16 9 14 10 45 11 27 11 32 12 51 13 22 14 15 15 43 16 7 17 34 17 56 18 14 18 54 19 5 20 31 20 41 20 52 21 42 22 42 23 46	231 231 232 247 208 233 236 243 249 226 236 207 212 215 224 213 235 232 243 245 232 244 230 224 212 228 208 216 218 234 216
-			

Star.	Mag.	L.S.T.	Az.
Star. Cephei β Cassiopeiæ γ Cassiopeiæ δ Cassiopeiæ γ Persei γ Persei γ Persei γ Persei γ Aurigæ ο Ursæ Majoris ι Ursæ Majoris β Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris ε Ursæ Majoris ι Draconis η Draconis η Perculis γ Draconis γ Draconis γ Cygni α	3.6 2.4 2.3 2.5 2.8 3.1 1.9 3.1 3.3 2.4 3.2 2.5 3.4 1.7 2.4 1.9 3.5 2.9 3.6 3.0 1.3	h. m. 0 12 2 5 2 41 2 48 3 14 5 20 5 47 6 8 7 43 8 26 10 9 11 24 11 51 13 6 13 37 14 8 14 17 15 16 15 36 16 12 17 20 18 1 19 52 20 20 22 14 23 11	327 329 333 322 331 316 308 304 301 299 335 306 323 321 309 337 288 314 312 299 299

1			
Star.	Mag.	L. S.T.	Az,
	<u> </u>	h. m.	0
o Tauri	3.8	2 17	147
	3.6	2 29	147
m ·		2 34	124
γ Tauri α Tauri	3.9	2 45	121
α Tauri ζ Tauri	3.0	3 32	109
$\pi^3 Orionis \dots \dots$	3.3	4 0	157
~ .	1.9	4 47	121
γ Geminorum α Orionis	I·2	4 59	154
ξ Geminorum	3.4		131
β Canis Minoris	3·I	5 10 6 22	148
β Cancri	3.8		144
ε Hydræ	3.5	7 3 7 58	158
o Leonis	3.8	8 22	141
α Leonis	1.3	8 36	133
ρ Leonis	3.9	9 19	143
θ Leonis	3.4	9 26	123
β Leonis	2.2	10 5	125
ε Virginis	3.0	11 36	137
η Boötis	2.8	11 57	115
α Boötis	0.2	12 15	113
γ Serpentis	3.9	14 9	123
γ Herculis	3.8	14 22	114
α Serpentis	2.8	14 56	158
α Herculis	3.5	15 34	127
х Ophiuchi	3.4	15 44	144
α Ophiuchi	2·I	16 3	133
72 Ophiuchi	3.7	16 54	144
ζ Aquilæ	3.0	17 28	129
γ Aquilæ	2.8	18 25	140
α Aquilæ	0.9	18 45	148
α Delphini	3.9	18 54	124
ε Delphini	4.0	19 10	138
ε Pegasi	2.5	20 30	144
ζ Pegasi	3.6	21 22	141
α Pegasi	2.6	2I 22	126
γ Pegasi	2.9	22 31	126
η Piscium	3.7	23 48	126
			i
-		, -	
			-
		_	
			j
		İ	ı
]		İ	
'			

L.S.T. Star. Mag. Az. h. m. α Pegasi ... 2.6 0 40 234 γ Pegasi ... 2.0 I 47 234 n Piscium 6 3.7 234 4 23 5 30 o Tauri 3.8 213 π^3 Orionis ... 3.3 203 γ Tauri 5 56 6 17 236 3.9 α Tauri 1.1 239 6 19 3.6 Tauri 245 6 43 α Orionis ... 206 1.2 Tauri ... 3.0 7 34 251 É Geminorum ... 8 12 229 3.4 Y Geminorum ... 8 19 239 1.9 6 Canis Minoris 8 24 3·1 212 β Cancri ... 216 3.8 9 21 9 26 202 ε Hydræ ... 3.5 3.8 o Leonis ... 10 52 219 α Leonis ... 1.3 II 32 227 ρ Leonis ... θ Leonis ... 3.9 II 39 217 12 54 237 3.4 β Leonis ... 13 25 235 2.2 ε Virginis 14 20 223 3.0 η Boötis ... 15 45 2.8 245 a Boötis 0.2 16 247 16 24 202 a Serpentis 2.8 Serpentis 17 37 237 3.9 216 х Ophiuchi 3·4 3·8 18 18 4 18 14 Y Herculis 246 α Herculis 18 48 233 3.2 227 α Ophiuchi 18 59 2·I 19 12 216 72 Ophiuchi 3.7 ζ Aquilæ ... 20 36 23I 3.0 212 α Aquilæ ... 20 49 0.9 220 20 59 γ Aquilæ ... 2.8 21 48 222 ε Delphini 4.0 236 22 18 α Delphini 3.9 216 ε Pegasi ... 22 50 2.5 219 ζ Pegasi ... 3.6 23 52

Star. Mag. L.S.T. Az Cephei	
ζ Cephei 3.6 0 5 32 β Cassiopeiæ 2.4 1 57 33 γ Cassiopeiæ 2.5 2 42 32 δ Cassiopeiæ 2.8 3 5 33 γ Andromedæ 2.3 4 29 29 γ Persei 3.1 5 15 31 α Persei 1.9 5 43 31 δ Persei 0.2 7 40 30 α Aurigæ 2.1 8 24 30 α Ursæ Majoris 3.1 11 20 30 β Ursæ Majoris 3.2 12 47 29 3 Ursæ Majoris 1.7 14 54 32 γ Ursæ Majoris 1.7 14	
β Cassiopeiæ 2·4 1 57 33 γ Cassiopeiæ 2·3 2 32 33 α Cassiopeiæ 2·8 3 5 32 δ Cassiopeiæ 2·8 3 5 33 γ Andromedæ 2·3 4 29 29 γ Persei 3·1 5 15 31 α Persei 3·1 5 43 31 δ Persei 3·1 6 4 30 α Aurigæ 2·1 8 24 30 α Lurigæ 2·1 8 24 30 α Urigæ Majoris 3·2 12 47 29 β Ursæ Majoris 2·4 12 59 32 γ Ursæ Majoris 3·2 13 35 30 γ Ursæ Majoris 1·7 14 54 <td< td=""><td>_</td></td<>	_
β Cassiopeiæ 2·4 I 57 33 γ Cassiopeiæ 2·3 2 32 33 δ Cassiopeiæ 2·8 3 5 33 γ Andromedæ 2·3 4 29 29 γ Persei 3·1 5 I5 31 α Persei 1·9 5 43 31 δ Persei 1·9 5 43 31 α Aurigæ 2·1 8 24 30 β Aurigæ 2·1 8 24 30 β Ursæ Majoris 3·1 I1 20 30 β Ursæ Majoris 3·2 I2 47 29 β Ursæ Majoris 2·4 I2 59 32 ψ Ursæ Majoris 2·4 I2 59 32 ψ Ursæ Majoris 1·7 I4 54 32 χ¹ Ursæ Majoris 1·7 I4 54 32<	9
α Cassiopeiæ 2·5 2 42 32 δ Cassiopeiæ 2·8 3 5 33 γ Andromedæ 2·3 4 29 29 γ Persei 3·1 5 15 31 α Persei 1·9 5 43 31 δ Persei 3·1 6 4 30 α Aurigæ 0·2 8 24 30 λ Urigæ Majoris 3·1 11 20 30 θ Ursæ Majoris 3·2 12 47 29 β Ursæ Majoris 2·4 12 59 32 γ Ursæ Majoris 2·4 12 59 32 γ Ursæ Majoris 3·2 14 3 30 γ Ursæ Majoris 2·5 14 3 32 δ Ursæ Majoris 1·7 14 54 32 γ Ursæ Majoris 1·7 14 54 32 γ Ursæ Majoris 1·7 14 54 32 γ Ursæ Majoris 1·7 14 54	1
δ Cassiopeiæ 2.8 3 5 33 γ Andromedæ 2.3 4 29 29 γ Persei 3.1 5 15 31 δ Persei 3.1 5 43 31 δ Persei 3.1 6 4 30 α Aurigæ 2.7 40 30 β Aurigæ 2.7 40 30 β Ursæ Majoris 3.1 11 20 β Ursæ Majoris 3.2 12 47 29 β Ursæ Majoris 2.4 12 59 32 β Ursæ Majoris 2.4 12 59 32 γ Ursæ Majoris 3.2 13 35 30 γ Ursæ Majoris 2.5 14 3 32 δ Ursæ Majoris 1.7 14 54 32 ζ¹Ursæ Majoris 2.4 15 29 32 ζ¹Ursæ Majoris 1.7 14 54 32 ζ¹Ursæ Majoris 1.7 14 54 32 ζ¹Ursæ Majoris 1.7 12 33 η Hercul	5
γ Andromedæ 2·3 4 29 29 γ Persei 3·1 5 15 31 δ Persei 1·9 5 43 31 δ Persei 3·1 6 4 30 α Aurigæ 2·2 7 40 30 β Aurigæ 2·1 8 24 30 ι Ursæ Majoris 3·1 11 20 30 θ Ursæ Majoris 3·2 12 47 29 β Ursæ Majoris 2·4 12 59 32 ψ Ursæ Majoris 2·4 12 59 32 ψ Ursæ Majoris 2·5 14 3 32 δ Ursæ Majoris 1·7 14 54 32 ζ¹Ursæ Majoris 1·7 14 54 32 ζ¹Ursæ Majoris 1·9 16 8 31 τ Draconis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31	
γ Persei 3·1 5 15 31 α Persei 1·9 5 43 31 δ Persei 3·1 6 4 30 α Aurigæ 0·2 7 40 30 β Aurigæ 2·1 8 24 30 ι Ursæ Majoris 3·1 11 20 30 θ Ursæ Majoris 3·2 12 47 29 β Ursæ Majoris 2·4 12 59 32 ψ Ursæ Majoris 3·2 13 35 30 γ Ursæ Majoris 2·5 14 3 32 δ Ursæ Majoris 1·7 14 54 32 ζ¹Ursæ Majoris 1·7 15 29 32 η Ursæ Majoris 1·9 16 8 31 ι Draconis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31 δ Cygni 3·0 22 12 30	
α Persei 1.9 5 43 31 δ Persei 3·1 6 4 30 α Aurigæ 0·2 7 40 30 β Aurigæ 2·1 8 24 30 ι Ursæ Majoris 3·1 11 20 30 θ Ursæ Majoris 3·2 12 47 29 β Ursæ Majoris 2·4 12 59 32 ψ Ursæ Majoris 3·2 13 35 30 γ Ursæ Majoris 2·5 14 3 32 δ Ursæ Majoris 3·4 14 10 32 ε Ursæ Majoris 1·7 14 54 32 γ Ursæ Majoris 1·9 16 8 31 η Ursæ Majoris 1·9 16 8 31 η Draconis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31 δ Cygni 3·0 22 12 30	
δ Persei 3·I 6 4 30 α Aurigæ 0·2 7 40 30 β Aurigæ 2·I 8 24 30 ι Ursæ Majoris 3·I II 20 30 θ Ursæ Majoris 3·2 I2 47 29 β Ursæ Majoris 2·4 I2 59 32 ψ Ursæ Majoris 3·2 I3 35 30 γ Ursæ Majoris 2·5 I4 3 32 δ Ursæ Majoris 3·4 I4 10 32 τ Ursæ Majoris 1·7 I4 54 32 τ Ursæ Majoris 1·9 16 8 31 τ Draconis 3·5 17 12 33 η Herculis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31 δ Cygni 3·0 </td <td></td>	
α Aurigæ 0·2 7 40 30 β Aurigæ 2·1 8 24 30 ι Ursæ Majoris 3·1 11 20 30 θ Ursæ Majoris 3·2 12 47 29 β Ursæ Majoris 2·4 12 59 32 ψ Ursæ Majoris 3·2 13 35 30 γ Ursæ Majoris 2·5 14 3 32 δ Ursæ Majoris 1·7 14 54 32 ζ¹Ursæ Majoris 1·7 14 54 32 ζ¹Ursæ Majoris 1·9 16 8 31 μ Ursæ Majoris 1.9 16 8 31 μ Draconis 3·5 17 12 33 η Herculis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31 δ Cygni 3·0 22 12 30	6
β Aurigæ 2·1 8 24 30 ι Ursæ Majoris 3·1 11 20 30 θ Ursæ Majoris 3·2 11 46 31 μ Ursæ Majoris 3·2 12 47 29 β Ursæ Majoris 2·4 12 59 32 ψ Ursæ Majoris 3·2 13 35 30 γ Ursæ Majoris 2·5 14 3 32 δ Ursæ Majoris 1·7 14 54 32 ζ¹Ursæ Majoris 1·7 14 54 32 η Ursæ Majoris 1·9 16 8 31 ι Draconis 3·5 17 12 33 η Herculis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31 δ Cygni 3·0 22 12 30	
t Ursæ Majoris 3·1 11 20 30 θ Ursæ Majoris 3·3 11 46 31 μ Ursæ Majoris 3·2 12 47 29 β Ursæ Majoris 2·4 12 59 32 ψ Ursæ Majoris 2·5 14 3 35 δ Ursæ Majoris 3·4 14 10 32 ε Ursæ Majoris 1·7 14 54 32 ζ¹ Ursæ Majoris 1·7 14 54 32 ζ¹ Ursæ Majoris 1·7 15 29 32 η Ursæ Majoris 1·9 16 8 31 μ Draconis 3·6 19 10 28 β Draconis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31 δ Cygni 3·0 22 12 30	
μ Ursæ Majoris 3·2 12 47 29 β Ursæ Majoris 2·4 12 59 32 ψ Ursæ Majoris 3·2 13 35 30 γ Ursæ Majoris 2·5 14 3 32 δ Ursæ Majoris 1·7 14 54 32 ζ¹ Ursæ Majoris 2·4 15 29 32 η Ursæ Majoris 1·9 16 8 31 ι Draconis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31 δ Cygni 3·0 22 12 30	8
β Ursæ Majoris ψ Ursæ Majoris γ Ursæ Majoris δ Ursæ Majoris δ Ursæ Majoris ε Ursæ Majoris τ Ursæ Majoris ε Ursæ Majoris τ Ursæ Majoris τ Ursæ Majoris τ Ursæ Majoris τ Ursæ Majoris τ Draconis τ Draconis τ Β Β Β Β Β Β Β Β Β Β Β Β Β Β Β Β Β Β Β	
ψ Ursæ Majoris 3·2 13 35 30 γ Ursæ Majoris 2·5 14 3 32 δ Ursæ Majoris 3·4 14 10 32 ε Ursæ Majoris 1·7 14 54 32 ζ¹Ursæ Majoris 2·4 15 29 32 η Ursæ Majoris 1·9 16 8 31 ι Draconis 3·6 19 10 28 β Draconis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31 δ Cygni 3·0 22 12 30	
Y Ursæ Majoris 2·5 14 3 32 δ Ursæ Majoris 3·4 14 10 32 ε Ursæ Majoris 1·7 14 54 32 ζ¹Ursæ Majoris 2·4 15 29 32 η Ursæ Majoris 1·9 16 8 31 ι Draconis 3·6 19 10 28 β Draconis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31 δ Cygni 3·0 22 12 30	
δ Ursæ Majoris 3.4 14 10 32 ε Ursæ Majoris 1.7 14 54 32 ζ¹Ursæ Majoris 2.4 15 29 32 η Ursæ Majoris 1.9 16 8 31 ι Draconis 3.5 17 12 33 η Herculis 3.6 19 10 28 β Draconis 3.0 19 47 31 γ Draconis 2.4 20 16 31 δ Cygni 3.0 22 12 30	
E Ursæ Majoris 1.7 14 54 32 ζ¹Ursæ Majoris 2.4 15 29 32 η Ursæ Majoris 1.9 16 8 31 ι Draconis 3.5 17 12 33 η Herculis 3.6 19 10 28 β Draconis 3.0 19 47 31 γ Draconis 2.4 20 16 31 δ Cygni 3.0 22 12 30	
ζ¹ Ursæ Majoris 2·4 15 29 32 η Ursæ Majoris 1·9 16 8 31 ι Draconis 3·5 17 12 33 η Herculis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31 δ Cygni 3·0 22 12 30	
η Ursæ Majoris 1·9 16 8 31 ι Draconis 3·5 17 12 33 η Herculis 3·6 19 10 28 β Draconis 3·0 19 47 31 γ Draconis 2·4 20 16 31 δ Cygni 3·0 22 12 30	
η Herculis 3.6 19 10 28 β Draconis 3.0 19 47 31 γ Draconis 2.4 20 16 31 δ Cygni 3.0 22 12 30	ō
β Draconis 3.0 19 47 31 γ Draconis 2.4 20 16 31 δ Cygni 3.0 22 12 30	2
γ Draconis 2·4 20 16 31 δ Cygni 3·0 22 12 30	9
8 Cygni 3.0 22 12 30	
	•
a oygar 13 23 9 30	
	-
•	
•	
* * * * * * * * * * * * * * * * * * * *	
	,

SE. QUADRANT NE. QUADRANT

Star.	Mag.	L.S.T.	Az.
γ Persei	3·1 1·9 3·1 3·3 3·2 2·4 2·5 3·6 3·6 3·6 3·6 3·6 2·4 3·6 3·6 3·6 2·4 3·6 3·6 3·6 3·6 3·6 3·6 3·6 3·6	h. m. 0 49 0 59 1 13 2 33 2 45 3 27 6 32 7 13 7 49 8 38 9 2 9 43 10 20 10 53 11 124 12 31 13 43 14 12 15 16 15 39 17 15 18 12 20 19 22 22 22 37 23 31	 40 48 52 65 56 58 51 43 64 58 33 35 48 66 69 42 44 58 29 27 34 64 58 29 27 34 64

Star.	Mag.	L.S.T.	Az.
		h. m.	0
o Tauri	3.8	2 9	143
γ Tauri	3.9	2 30	122
α Tauri	I.I	2 42	119
π^3 Orionis	3.3	3 50	152
γ Orionis	1.7	4 3 I	155
γ Geminorum	1.9	4 44	119
α Orionis	I·2	4 51	149
ξ Geminorum	3.4	5 6 6 14	128
β Canis Minoris β Cancri	3·1		144
TT1	3.2	6 57 7 48	141
ε Hydræ ζ Hydræ :	3.3	8 I	155
o Leonis	3.8	8 16	137
α Leonis	1.3	8 32	130
ρ Leonis	3.9	9 12	140
θ Leonis	3.4	9 23	120
β Leonis	2.2	10 2	123
ε Virginis	3.0	11 31	133
η Boötis	2.8	11 55	113
α Boötis	0.2	12 13	111
γ Serpentis	3.9	14 6	120
α Serpentis	2.8	14 46	152
α Herculis	3.2	15 30	124
× Ophiuchi α Ophiuchi	3.4	15 38	140
an Orbinshi	2·I	15 58 16 48	130
7 A auxil	3·7 3·0		140 126
γ Aquilæ	2.8	17 24 18 20	137
α Aquilæ	0.9	18 37	144
α Delphini	3.9	18 51	121
β Aquilæ	3.9	19 3	155
ε Delphini	4.0	19 4	135
ε Pegasi	2.5	20 24	140
ζ Pegasi	3.6	21 16	137
α Pegasi	2.6	21 18	123
γ Pegasi ω Piscium	2.9	22 27	124
n Piggium	4.0	23 4	154
η 1 ISCIUM	3.7	23 44	123
1.1			
		İ	l
3/0		311	ŀ
¥ 1			
	Į		- 1
			-
	j	ŀ	[

Star. L.S.T. Mag. h. m. α Pegasi ... 2.6 0 44 237 ω Piscium... 4.0 0 46 206 γ Pegasi ... 2.9 236 1 51 n Piscium... 3.7 3 10 237 3.8 Tauri 4 31 217 π3 Orionis ... 3.3 5 40 6 o 208 Tauri 3.9 238 Orionis ... 1.7 6 11 205 Tauri 6 20 241 I • I α Orionis ... 6 52 1.2 211 Tauri ... 3.0 7 36 253 Geminorum ... 8 16 .232 3.4 8 22 Geminorum ... 1.9 24 I Canis Minoris 216 8 32 3.1 Cancri ... 3.8 9 27 219 208 Hvdræ ... 9 36 3.2 ζ Hydræ ... 9 41 205 3.3 Leonis ... 223 3.8 10 58 α Leonis ... 1.3 11 36 230 220 Leonis ... 3.9 11 46 θ Leonis ... 12 57 240 3.4 β Leonis ... 13 28 237 2.2 ε Virginis... 227 3.0 14 25 2472.8 15 47 η Boötis 0.2 16 11 249 a Boötis 208 α Serpentis 2.8 16 34 γ Serpentis 240 3.9 17 40 220 18 10 х Ophiuchi 3.4 236 α Herculis 18 52 3.2 230 α Ophiuchi 2·I 19 4 220 19 18 72 Ophiuchi 3.7 205 20 39 Aquilæ ... 3.9 20 40 234 Aquilæ ... 3.0 216 20 57 α Aquilæ ... 0.0 223 γ Aquilæ ... 21 4 2.8 225 Delphini 4.0 21 54 239 α Delphini 22 2I 3.9 220 ε Pegasi ... 22 56 2.5 223 23 58 ζ Pegasi ... 3.6

Star. Mag. L.S.T. Az	5.
h m c	
1 1 1 11. 1	<u>, </u>
β Cassiopeiæ 2·4 1 48 33	3
α Cassiopeiæ 2.5 2 35 32	
γ Andromedæ 2·3 4 27 29	
γ Persei 3·1 5 9 32	
α Persei 1-9 5 39 31 8 Persei 3-1 6 1 30	
α Aurigæ 0·2 7 37 30 β Aurigæ 2·1 8 21 30	
Ursæ Majoris 3.1 11 16 30	
θ Ursæ Majoris 3·3 11 41 31	- 1
μ Ursæ Majoris 3·2 12 45 29	
β Ursæ Majoris 2·4 12 52 32	
ψ Ursæ Majoris 3·2 13 32 30	
γ Ursæ Majoris 2·5 13 57 32 δ Ursæ Majoris 3·4 14 2 33	
ε Ursæ Majoris 1·7 14 47 32 ζ¹ Ursæ Majoris 2·4 15 23 32	
η Ursæ Majoris 1·9 16 4 31	
t Draconis 3.5 17 3 33	4
η Herculis 3.6 19 8 29	
β Draconis 3.0 19 42 31	
γ Draconis 2·4 20 11 31 δ Cygni 3·0 22 9 30	
δ Cygni 3·0 22 9 30 α Cygni 1·3 23 6 30	
ζ Cephei 3.6 23 57 33	
,	
90 0	
147	
	7

Star.	Mng.	L.S.T.	Az.
β Persei γ Persei γ Persei δ Persei γ Aurigæ α Aurigæ β Aurigæ ι Ursæ Majoris ψ Ursæ Majoris ψ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris δ Ursæ Majoris τ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Draconis η Herculis β Draconis γ Cygni α Cygni α Cygni α Cygni α Cygni α Cygni α Cassiopeiæ α Cassiopeiæ γ Andromedæ	2.6 3.1 1.9 3.3 3.2 2.4 2.5 3.4 1.7 2.4 1.9 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6	h. m. 0 36 0 55 1 3 1 17 2 35 2 48 3 30 6 36 7 18 7 51 8 41 9 10 9 49 10 28 11 1 26 11 28 12 33 14 14 15 21 15 44 17 53 18 15 20 27 22 32 22 45 23 33	65 38 46 51 64 56 56 56 57 40 56 56 57 42 56 56 57 56 57 56 57 56 57 56 57 56 57 56 57 56 57 56 57 56 57 56 57 57 57 57 57 57 57 57 57 57 57 57 57
å o			

2:			
Star.	Mag.	L.S.T.	Az.
	<u> </u>	h. m.	0
o Tauri	3.8	2 3	140
γ Tauri	3.9	2 28	120
α Tauri	1.1	2 40	117
π^3 Orionis	3.3	3 42	147
γ Orionis	1.7	4 22	149
γ Geminorum	1.9	4 41	117
α Orionis	1.5	4 44	145
ξ Geminorum	3.4	5 3	126
β Canis Minoris	3. I	6 8	141
α Canis Minoris	0.5	6 44	154
β Cancri	3.8	6 52	137
ε Hydræ ζ Hydræ	3.2	7 40	148
o Leonis	3.3	7 53 8 11	150
α Leonis	3.8	8 11 8 28	134
	1.3		128
ρ Leonis θ Leonis	3.9	9 7	136 118
β Leonis	3·4 2·2	9 21	120
ε Virginis	3.0	9 59 11 27	130
η Boōtis	2.8	11 54	111
α Boötis	0.2	12 11	109
γ Serpentis	3.9	14 4	118
α Serpentis	2.8	14 38	148
E Serpentis	3.8	15 4	158
α Herculis	3.2	15 27	122
х Ophiuchi	3.4	15 32	137
α Ophiuchi	2·I	15 54	127
72 Ophiuchi	3.7	16 42	137
ζ Aquilæ	3∙0	17 21	124
γ Aquilæ	2.8	18 15	134
α Aquilæ	0.9	18 31	140
α Delphini	3.9	18 48	119
β Aquilæ	3.9	18 53	150
ε Delphini	4.0	19 0	132
ε Pegasi ζ Pegasi	2·5 3·6	20 19	137
α Pegasi	3.0	2I II	134
γ Pegasi	~ 0	21 15 22 24	12I 12I
ω Piscium	2·9 4·0	22 24 22 55	149
η Piscium	3.7	23 4I	149
, -,	5/	-2 47	
	-		
		*	
	l		L

Star. ζ Pegasi ω Pegasi γ Pegasi γ Pegasi η Piscium τ Tauri γ Tauri γ Orionis γ Orionis γ Orionis	3.6 2.6 4.0 2.9 3.7 3.8	L. S.T. h. m. 0 3 0 47 0 55 I 54	Az. 226 239 211
α Pegasi ω Piscium γ Pegasi η Piscium ο Tauri π³ Orionis γ Tauri	2·6 4·0 2·9 3·7 3·8	0 3 0 47 0 55 1 54	226 239
α Pegasi ω Piscium γ Pegasi η Piscium ο Tauri π³ Orionis γ Tauri	2·6 4·0 2·9 3·7 3·8	0 47 0 55 I 54	239
α Pegasi ω Piscium γ Pegasi η Piscium ο Tauri π³ Orionis γ Tauri	2·6 4·0 2·9 3·7 3·8	0 47 0 55 I 54	
	2·9 3·7 3·8	0 55 I 54	211
η Piscium ο Tauri π ³ Orionis γ Tauri	2·9 3·7 3·8	I 54	
η Piscium ο Tauri π ³ Orionis γ Tauri	3·7 3·8		239
π^3 Orionis γ Tauri	3.8	3 13	239
γ Tauri		4 37	220
	3.3	5 48	213
γ Orionis	3.9	6 2	240
	1.7	6 20	211
α Tauri	1.1	6 22	243
α Orionis	1.2	6 58	215
ξ Geminorum	3.4	8 19	234
γ Geminorum	1.9	8 25	243
α Canis Minoris	0.2	8 26	206
β Canis Minoris	3.1	8 38	219
β Cancri	3.8	9 32	223
ε Hydræ	3.2	9 44	212
ζ Hydræ	3.3	9 49	210
o Leonis	3.8	11 3	226
α Leonis	1.3	11 40	232
ρ Leonis	3.9	11 51	224
θ Leonis	3.4	12 59	242
β Leonis	2.2	13 31	240
ε Virginis	3.0	14 29	230
η Boötis	2.8	15 48	$\left egin{array}{c} 249 \ 251 \end{array} ight $
a Bootis	0.2	16 13	202
ε Serpentis	3.8	16 30	212
α Serpentis	2.8	16 42	
γ Serpentis	3.9	17 42 18 15	242
κ Ophiuchi		_	238
α Herculis α Ophiuchi	3.5		233
	2·I		223
	3.7	19 24	236
	2.0	1 20 42	
ζ Aquilæ	-	20 43	
ζ Aquilæ β Aquilæ	3.9	20 49	210
ζ Aquilæ β Aquilæ α Aquilæ			210 220
β Aquilæ β Aquilæ α Aquilæ γ Aquilæ	3·9 0·9 2·8	20 49 21 3 21 9	210
ζ Aquilæ β Aquilæ α Aquilæ	o.9 3.9	20 49 21 3	210 220 226
			220

	_
Star. Mag. L. S.T. A	z.
β Cassiopeiæ 2.4 1 38 33 α Cassiopieæ 2.5 2 27 32 γ Persei 2.6 5 30 29 γ Persei 2.6 5 30 29 α Persei 1.9 5 35 31 δ Persei 3.1 5 57 30 η Aurigæ 3.3 7 27 29 α Aurigæ 2.1 8 18 30 ι Ursæ Majoris 3.1 11 12 31 β Aurigæ 2.1 8 18 30 ι Ursæ Majoris 3.1 11 12 31 β Ursæ Majoris 3.2 12 43 29 γ Ursæ Majoris 2.4 12 44 33 γ Ursæ Majoris 3.4 13 54 33 ε Ursæ Majoris 1.7 14 39 33 γ Ursæ Majoris 1.9 16 0 31 <td>6 98 2 5 4 9 6 6 4 1 9 8 1 4 4 2 0 7 4 5 3 0 8 4 4 4</td>	6 98 2 5 4 9 6 6 4 1 9 8 1 4 4 2 0 7 4 5 3 0 8 4 4 4

Star. L.S.T. Mag. Az. h. m. β Persei 2.6 0 39 63 Y Persei 3.1 I 36 45 49 65 α Persei 1.9 I 8 δ Persei I 21 3.1 ε Persei ... 3.0 I 28 η Aurigæ ... 62 3.3 2 37 α Aurigæ ... 0.2 2 52 53 β Aurigæ ... 3 34 6 40 2 · I 54 ι Ursæ Majoris 3.1 47 θ Ursæ Majoris 39 61 3.3 7 24 μ Ursæ Majoris 7 54 8 45 3.2 ψ Ursæ Majoris β Ursæ Majoris 3.2 54 2.4 9 19 27 Y Ursæ Majoris 9 56 2.5 34 δ Ursæ Majoris 10 38 3.4 25 ε Ursæ Majoris ζ¹ Ursæ Majoris 1.7 ΙI 9 28 11 33 2.4 31 η Ursæ Majoris 44 63 1.9 11 33 β Boötis ... 12 35 14 16 3.6 n Herculis 3.6 66 β Draconis 15 27 38 3.0 γ Draconis 2.4 40 67 15 50 a Lyras ... 0.1 16 9 δ Cygni 55 64 3.0 17 22 γ Cygni 2.3 17 55 α Cygni 18 19 54 24 1.3 ζ Cephei ... 3.6 20 37 μ Andromedæ ... 3.9 22 27 68 α Cassiopeiæ ... 22 53 2.5 29 Y Andromedæ ... 23 36 61

Star.	Mag.	L.S.T.	Az.
		h. m.	0
o Tauri	3.8	I 58	136
α Ceti	ž·8	2 15	158
γ Tauri	3.9	2 25	117
α Tauri	I·I	2 38	115
π ³ Orionis	3.3	3 35	143
γ Orionis	1.7	4 14	145
α Orionis	I · 2	4 37	141
γ Geminorum	1.9	4 39	114
ξ Geminorum	3.4	4 59	123
β Canis Minoris	3.1	6 2	137
α Canis Minoris	0.2	6 35	149
β Cancri	3.8	6 47	134
ε Hydræ ζ Hydræ	3.2	7 33	144
ζ Hydræ o Leonis	3·8	7 45 8 7	145
Ti-	1.3		131 125
ρ Leonis	3.9	8 25 9 2	133
θ Leonis	3.4	9 18	116
β Leonis	2.2	9 56	118
ε Virginis	3.0	11 23	128
δ Virginis	3.7	12 8	158
α Boötis	0.2	12 10	107
γ Serpentis	3.9	14 1	116
α Serpentis	2.8	14 31	144
ε Serpentis	3.8	14 54	153
α Herculis	3.2	15 24	119
х Ophiuchi	3.4	15 28	134
α Ophiuchi	2·I	15,51	124
72 Ophiuchi	3.4	16 37	134
β Ophiuchi	2.9	16 47	153
ζ Aquilæ	3·0 2·8	17 18	IZI
γ Aquilæ α Aquilæ		18 11 18 26	131
α Aquilæ α Delphini	3·9	!	137 116
β Aquilæ	3.9	18 45 18 46	146
ε Delphini	4.0	18 56	129
ε Pegasi	2.5	20 14	134
ζ Pegasi	3.6	21 7	131
α Pegasi	2.6	21 13	118
γ Pegasi	2.9	. 22 21	119
ω Piscium	4.0	22 48	145
η Piscium	3.7	23 39	118
+			J
140			
*			
l		<u> </u>	

Star.	Mag.	L. S.T.	Az.
α Cassiopeiæ μ Andromedæ γ Andromedæ γ Persei β Persei α Persei δ Persei δ Persei λ Persei α Aurigæ α Aurigæ	2·5 3·9 2·3 3·1 2·6 1·9 3·1 3·0 3·3 0·2	h. m. 2 19 3 17 4 22 4 57 5 27 5 30 5 53 6 16 7 25 7 30	331 292 299 324 297 315 311 295 298 307
β Aurigæ t Ursæ Majoris θ Ursæ Majoris β Ursæ Majoris μ Ursæ Majoris ψ Ursæ Majoris γ Ursæ Majoris δ Ursæ Majoris δ Ursæ Majoris τ Ursæ Majoris τ Ursæ Majoris η Ursæ Majoris η Ursæ Majoris η Boötis	2·I 3·I 3·3 2·4 3·2 3·2 2·5 3·4 I·7 2·4 I·9 3·6	8 14 11 8 11 30 12 35 12 40 13 25 13 44 13 44 14 31 15 9 15 55 17 23	306 313 321 333 299 306 326 335 332 329 316 297
η Herculis β Draconis γ Draconis α Lyræ δ Cygni γ Cygni α Cygni ζ Cephei	3.6 3.0 2.4 0.1 3.0 2.3 1.3 3.6	19 5 19 31 20 0 20 59 22 2 22 43 22 59 23 39	294 322 320 293 305 296 306 336
		8-1	
•		÷	
		•	

Star. Mag. L. S.T. Az. β Persei 2.6 62 0 41 γ Persei 3.1 1 34 α Persei 1.9 I 13 43 δ Persei 47 63 3.1 I 25 ε Persei 3.0 I 30 η Aurigæ ... 61 2 39 3.3 α Aurigæ ... 0.2 2 56 51 3 37 6 44 β Aurigæ ... 2 · I 53 L Ursæ Majoris 3.1 45 θ Ursæ Majoris 3.3 7 30 37 μ Ursæ Majoris 7 56 8 48 59 53 24 3.5 ψ Ursæ Majoris 3.2 β Ursæ Majoris 2.4 9 29 γ Ursæ Majoris 2.5 10 3 32 65 26 12 Canum Venat. 2.9 10 29 ε Ursæ Majoris 1.7 11 18 η Ursæ Majoris ζ¹ Ursæ Majoris 1.9 11 38 42 11 41 2.4 29 65 γ Boötis ... 3.0 I 2 6 β Boötis ... 3.6 12 38 61 65 36 η Herculis 14 18 3.6 β Draconis 15 33 3.0 γ Draconis 38 2.4 15 56 65 53 63 16 11 α Lyræ 0· I δ Cygni 3.0 17 25 γ Cygni 2.3 17 57 α Cygni 53 21 1.3 18 22 ζ Cephei ... 3.6 20 49 μ Andromedæ ... 67 3.9 22 29 α Cassiopeiæ 26 2.5 23 γ Andromedæ ... 2.3 23 38 59

Star.	Mag.	L. S.T.	Az.
		h. m.	0
o Tauri	3.8	1 53	132
γ Ceti	3.7	1 55	157
α Ceti	2.8	2 5	153
γ Tauri	3.9	2 23	115
π^3 Orionis	3.3	3 29	140
γ Orionis α Orionis	1.7	4 8	142
α Orionis ξ Geminorum	1.2	4 32	138
β Canis Minoris	3·4 3·1	4 56 5 58	121
α Canis Minoris	0.2	5 58 6 28	134
β Cancri	3.8	6 42	145
ε Hydræ	3.2	7 27	141
ζ Hydræ	3.3	7 39	142
o Leonis	3.8	8 3	128
α Leonis·	1.3	8 22	123
ρ Leonis	3.9	8 58	130
θ Leonis	<i>3</i> ·4	9 16	114
β Leonis	2.2	9 54	116
ε Virginis	3.0	II 20	125
δ Virginis	3.7	11 57	152
α Boötis γ Serpentis	0·2 3·9	12 9	105
γ Serpentis α Serpentis	2.8	13 59	114
ε Serpentis	3.8	14 25 14 46	141 148
α Herculis	3.2	15 21	117
х Ophiuchi	3.4	15 24	131
α Ophiuchi	2·I	15 48	122
72 Ophiuchi	3.7	16 33	131
β Ophiuchi	2.9	16 39	149
ζ Aquilæ	3.0	17 15	ri9
γ Aquilæ	2.8	r8 8	128
α Aquilæ	0.9	18 21	134
δ Aquilæ	3.4	<i>18 36</i>	157
β Aquilæ	3.9	18 39	142
α <i>Delphini</i> ε Delphini	3.9	18 43	114
- Doggo	4.0	18 52	127
ζ Pegasi	2·5 3·6	20 IO 2I 2	131
α Pegasi	2.6	21 IO	116
γ Pegasi	2.9	22 18	117
γ Piscium	3.9	22 30	158
ω Piscium	4.0	22 42	141
η Piscium	3.7	23 36	ii6
A 0.			
			1

Star.	Mag.	L. S.T.	Az.
Canis Can	3.66 4.09 3.77 2.88 3.97 2.18 3.19	h. m. 12 52 18 20 318 323 351 447 634 710 634 710 848 942 957 1114 1336 14552 1648 1655 1747 1824 1839 19133 2014 19336 2023 2356	232 244 219 243 244 203 207 227 220 245 218 222 239 215 226 229 218 232 237 230 246 244 208 235 253 253 255 212 229 211 243 229 211 243 244 244 255 266 276 276 276 276 276 276 276 276 276
		E.	

Star. Mag. L.S.T. Az. α Cassiopeiæ 2.5 2 10 334 μ Andromedæ 3.9 3 15 293 γ Andromedæ 2.3 4 20 301 γ Persei 3.1 4 51 326 β Persei 2.6 5 25 23 α Persei 3.1 5 49 313 ε Persei 3.0 6 14 297 η Aurigæ 3.3 7 23 299 α Aurigæ 3.3 7 23 299 α Aurigæ 2.1 8 11 307 ι Ursæ Majoris 3.1 11 4 323 β Ursæ Majoris 3.3 11 24 323 μ Ursæ Majoris 3.2 12 28 306 μ Ursæ Majoris 3.2 13 37 328 ε Ursæ Majoris 1.7 14 22 334 ζ Ursæ Majoris 1.7 14 22 334 χ Ursæ Majoris 1.7 14 22 334 χ Ursæ Majoris 1.7 14 22 334 χ Boötis 3.0 <th>α Cassiopeiæ 2·5 2 10 334 μ Andromedæ 3·9 3 15 293 γ Persei 3·1 4 51 326 γ Persei 2·6 5 25 298 α Persei 1·9 5 25 317 δ Persei 3·0 6 14 297 η Aurigæ 3·3 7 23 299 α Aurigæ 3·3 7 23 299 α Aurigæ 3·3 7 23 299 α Aurigæ 2·1 8 11 307 ι Ursæ Majoris 3·1 1 4 315 θ Ursæ Majoris 3·3 11 24 323 μ Ursæ Majoris 3·2 12 38 301 μ Ursæ Majoris 3·2 12 28 301 μ Ursæ Majoris 1·7 14 22 334 ζ¹ Ursæ Majoris 1·7 14 22 334 ζ¹ Ursæ Majoris 1·7 14 22 <td< th=""><th></th><th></th><th></th><th></th></td<></th>	α Cassiopeiæ 2·5 2 10 334 μ Andromedæ 3·9 3 15 293 γ Persei 3·1 4 51 326 γ Persei 2·6 5 25 298 α Persei 1·9 5 25 317 δ Persei 3·0 6 14 297 η Aurigæ 3·3 7 23 299 α Aurigæ 3·3 7 23 299 α Aurigæ 3·3 7 23 299 α Aurigæ 2·1 8 11 307 ι Ursæ Majoris 3·1 1 4 315 θ Ursæ Majoris 3·3 11 24 323 μ Ursæ Majoris 3·2 12 38 301 μ Ursæ Majoris 3·2 12 28 301 μ Ursæ Majoris 1·7 14 22 334 ζ¹ Ursæ Majoris 1·7 14 22 334 ζ¹ Ursæ Majoris 1·7 14 22 <td< th=""><th></th><th></th><th></th><th></th></td<>				
α Cassiopeiæ 2.5 2 10 334 μ Andromedæ 3.9 3 15 293 γ Andromedæ 2.3 4 20 301 γ Persei 2.6 5 25 298 β Persei 1.9 5 25 317 δ Persei 3.1 5 49 313 ε Persei 3.0 6 14 297 η Aurigæ 3.3 7 23 299 α Aurigæ 2.1 8 11 307 ι Ursæ Majoris 3.3 11 24 323 β Ursæ Majoris 3.3 11 24 323 μ Ursæ Majoris 3.2 12 28 301 ψ Ursæ Majoris 3.2 12 38 301 ψ Ursæ Majoris 1.7 14 22 334 ζ¹ Ursæ Majoris 1.7 14 22 334 ζ¹ Ursæ Majoris 1.7 14 22 334 γ Ursæ Majoris 1.9 15 50 318 γ Boötis 3.0	α Cassiopeiæ 2.5 2 10 334 μ Andromedæ 3.9 3 15 293 γ Andromedæ 2.3 4 20 301 γ Persei 3.1 4 51 326 β Persei 2.6 5 25 298 α Persei 1.9 5 25 317 δ Persei 3.0 6 14 297 η Aurigæ 3.0 6 14 297 η Aurigæ 3.3 7 23 299 α Aurigæ 3.3 7 23 299 α Aurigæ 2.1 8 11 307 ι Ursæ Majoris 3.3 11 4 315 θ Ursæ Majoris 3.3 11 24 323 μ Ursæ Majoris 3.2 12 38 301 ψ Ursæ Majoris 3.2 12 38 301 ψ Ursæ Majoris 1.7 14 22 334 ζ¹Ursæ Majoris 1.7 14 22	Star.	Mag.	L. S.T.	Az.
- 2		μ Andromedæ γ Andromedæ γ Persei β Persei δ Persei ε Persei α Aurigæ α Aurigæ β Aurigæ ι Ursæ Majoris θ Ursæ Majoris μ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris ε Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris κ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris κ Ursæ Majoris γ Ursæ Majoris	3.9 2.3 3.1 2.6 1.9 3.1 3.3 2.1 3.3 2.1 3.3 2.4 2.5 1.7 2.4 2.9 3.6 3.6 3.6 3.6 3.6 3.6 3.7 2.4 2.9 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6	2 10 3 15 4 20 4 51 5 25 5 49 6 14 7 23 7 26 8 11 11 24 12 25 12 38 13 22 13 37 14 22 15 15 15 50 16 52 17 20 19 25 19 54 20 57 21 59 22 41 22 56	334 293 301 326 298 317 313 297 299 309 307 315 323 336 301 307 328 331 295 329 295 324 322 295 307 297 307

Star.	Mag.	L. S.T.	Az.
β Persei	2·6 3·1 1·9 3·1 3·0 3·3 3·2 2·1 2·0 3·1 3·3 3·2 2·5 2·9 2·4 3·6 3·6 3·9 2·3 1·3 3·6 3·9 2·3 3·9 2·3 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3	h. m. 0 44 1 14 1 18 1 30 1 32 2 42 3 0 3 41 5 8 6 49 7 36 7 59 8 52 10 11 10 32 11 44 11 51 12 9 12 40 16 2 16 14 17 29 18 0 18 26 21 1 22 31 23 41	60 32 41 46 62 59 49 51 77 43 35 57 51 29 64 60 63 34 64 65 61 51 57 57
		•	× . •

			<u> </u>
Star.	Mag.	L. S.T.	Az.
		h. m.	0
γ Ceti	3.7	1 45	152
o Tauri	3.8	I 50	130
α Ceti	2.8	r 56	148
π^3 Orionis	3.3	3 23	136
γ Orionis	1.7	4 2	138
α Orionis	I · 2	4 26	135
ξ Geminorum	3.4	4 54	119
β Canis Minoris α Canis Minoris	3.1	5 54	131
α Canis Minoris β Cancri	0.5	6 21	141
. YT 1	3.8	6 38	128
ε Hydræ ζ Hydræ	3.5	7 21	137
o Leonis	3·8	7 33	138 126
α Leonis	1.3	7 59 8 19	120
ρ Leonis	3.9	8 54	128
β Leonis	2.2	9 51	114
β Virginis	3.8	10 58	156
ε Virginis	3.0	11 16	123
δ Virginis	3.7	11 49	148
α Boötis	0.2	12 7	103
γ Serpentis	3.9	13 57	111
α Serpentis	2.8	14 19	137
ε Serpentis	3.8	14: 39	144
α Herculis	3.2	15 19	115
к Ophiuchi	3.4	15 20	128
λ Ophiuchi	3.9	15 39	155
α Ophiuchi	2·I	15 45	120
72 Ophiuchi	3.7	16 29	128
β Ophiuchi	2.9	16 32	145
ζ Aquilæ	3.0	17 13	117
γ Aquilæ	2.8	18 4	126
α Aquilæ δ Aquilæ	0.9	18 17 18 26	131
δ Aquilæ β Aquilæ	3·4 3·4	18 33	152
ε Delphini	4·0	18 49	124
ε Pegasi	2.5	20 6	128
ζ Pegasi	3.6	20 59	126
α Pegasi	2.6	21 8	114
γ Pegasi	2.9	22 16	114
γ Piscium	3.9	22 20	153
ω Piscium	4.0	22 36	138
η Piscium	3.7	23 34	114
			[

.—	····				,
	Star.	Mag.	L. S.T.	Az.	
-			h. m.	•	
	γ Piscium	3.9	0 6	207	
	γ Piscium ζ Pegasi	3.6	0 15	234	
	α Pegasi	2.6	0 54	246	ĺ
	ω Piscium	4·0 2·9	1 14 2 2	222	•
	γ Pegasi η Piscium	3.7	3 20	246	l
	γ Ceti	3.7	3 33	208	l
	α Ceti	2.8	4 0	212	1
	o Tauri	3⋅8	4 50	229	l
1	π^3 Orionis	3.3	6 7	224	
	γ Orionis	1.7	6 40	222	Ī
ì	α Orionis	I·2	7 16	225	l
2	ξ Geminorum α Canis Minoris	3.4	8 28 8 49	24I 219	
1	β Canis Minoris	3.1	8 49 8 52	229	
	β Cancri	3.8	9 46	232	l
	ε Hydræ	3.2	10 3	223	•
	ζ Hydræ	3.3	10 9	222	l
1	o Leonis	3.8	11 15	234	l
1	α Leonis	1.3	11 49	240	l
	ρ Leonis	3·8	12 4 12 34	232 204	ı
1	β Virginis β Leonis	2.2	13 39	246	
1	δ Virginis	3.7	13 53	212	
	ε Virginis	3.0	14 40	237	l
	η Boötis	2.8	15 54	255	
1	a Boötis	0.2	16 17	257	l
1	E Serpentis	3.8	16 55	216	ı
	α Serpentis	2.8	17 I	223	l
1	λ Ophiuchi γ Serpentis	3·9 3·9	17 15 17 49	205 249	
	γ Serpentis × Ophiuchi	3.4	18 28	232	l
1	β Ophiuchi	2.9	18 47	215	ı
l	α Herculis	3.5	19 3	245	
	α Ophiuchi	2.1	19 17	240	l
7	2 Ophiuchi		19 37	232	l
	δ Aquilæ	3.4	20 16	208	ı
	ζ Aquilæ β Aquilæ	3.0	20 5I 21 9	243 222	
	β Aquilæ α Aquilæ	0.9	21 9 21 17	229	
	γ Aquilæ	2.8	21 20	234	
	ε Delphini	4.0	22 9	236	
	E Pegasi	2.5	23 14	232	
		ļ	[
'-			•		•

Star. L. S.T. Mag. Az. m. β Persei 2.6 58 0 47 γ Persei 3.1 I 22 29 α Persei 1.9 I 23 39 δ Persei 1 35 3.1 44 60 ε Persei ... 3.0 1 35 η Aurigæ ... 3.3 2 45 57 α Aurigæ ... 47 65 0.2 3 4 3 35 θ Aurigæ ... 2.7 β Aurigæ ... 3 45 5 10 49 75 2 · I a Geminorum ... 2.0 ι Ursæ Majoris 3.1 6 54 41 7 43 8 2 θ Ursæ' Majoris 3.3 33 μ Ursæ Majoris 3.2 56 Ursæ Majoris 8 56 3.2 49 Y Ursæ Majoris 2.5 10 20 27 12 Canum Venat. 62 2.9 10 34 η Ursæ Majoris 11 49 38 1.9 Boötis ... 62 3.0 I2 II 58 61 β Boötis ... 3.6 12 43 η Herculis 3.6 14 23 π Herculis 65 14 53 3.4 15 48 16 8 β Draconis 31 3.0 γ Draconis 2.4 34 62 α Lyræ 0· I 16 16 δ Cygni 3.0 17 33 49 γ Cygni 2.3 18 59 49 63 α Cygni 18 30 1.3 μ Andromedæ ... 3.9 22 34 γ Andromedæ ... 23 44 56 2.3

SE. QUADRANT

Star.	Mag.	L. S.T.	Az.
-	<u> </u>	h. m.	0
γ Ceti	3.7	1 38	148
o Tauri	3.8	1 46	128
α Ceti	2.8	1 49	144
π^3 Orionis	3.3	3 19	133
γ Orionis	1.7	3 58	135
α Orionis	I·2	4 22	132
ξ Geminorum β Canis Minoris	3.4	4 51	116
α Canis Minoris	0·2	5 50 6 16	128
β Cancri	3.8	6 35	138 126
ε Hydræ	3.2	7 17	134
ζ Hydræ	3.3	7 28	135
o Leonis	3.8	7 57	124
α Leonis	1.3	8 16	118
p Leonis	3.9	8 51	125
β Virginis	3.8	10 49	150
ε Virginis	3.0	11 13	120
δ Virginis	3.7	II 43	144
γ Serpentis a Serpentis	<i>3.9</i> 2.8	13 55	109
α Serpentis ε Serpentis	3.8	14 15 14 33	134
ж Ophiuchi	3.4	14 33 15 16	141.
λ Ophiuchi	3.9	15 31	151
α Ophiuchi	2·I	15 42	117
β Ophiuchi	2.9	16 26	141
72 Ophiuchi	3.7	16 26	126
ζ Aquilæ	3.0	17 10	115
γ Aquilæ	2.8	18 1	123
α Aquilæ δ Aquilæ	0-9	18 13	128
δ Aquilæ β Aquilæ	3.4	18 18 18 28	147
ε Delphini	3.9	18 46	135
ε Pegasi	4·0 2·5	20 2	122 125
ζ Pegasi	3.6	20 56	123
α Pegasi	2.6	21 6	112
γ Piscium	3.9	22 II	148
ω Piscium	4.0	22 31	135
η Piscium	3.7	23 32	112
•			
		1	
'		-1]

Star.	Mag.	L. S.T.	· Az.		Star.	Mag.	L.S.T.	Az.
		h. m.	0]	h. m.	0
γ Piscium	3.9	0 15	212		μ Andromedæ	3.9	3 10	297
ζ Pegasi	3.6	0 18	237		γ Andromedæ	2.3	4 14	304
a Pegasi	2.6	0 56	248		γ Persei	3.1	4 36	331
ω Piscium	4.0	1 19	225		α Persei	1.9	5 15	321
γ Pegasi	مفا	2 4	248		β Persei	2.6	5 19	302
n Piscium	3.7	3 22	248		δ Persei	3·1	5 39	316
γ Ceti	3.7	3 40	212		ε Persei	3.0	6 9	300
α Ceti	- 0	4 7	216		η Aurigæ	3.3	7 17	303
o Tauri	3.8	4 54	232		α Aurigæ	0.2	7 18	313
π^3 Orionis	مما	6 11	227	1	β Aurigæ	2·I	8 3	311
γ Orionis		6 44	225]	θ Aurigæ	2.7	8 13	295
α Orionis	1.2	7 20	229		a Geminorum	2.0	9 48	285
ξ Geminorum	3.4	8 31	244	1	ι Ursæ Majoris	3.1	10 54	319
α Canis Minoris	0.5	8 54	222		θ Ursæ Majoris	3.3	11 11	327
β Canis Minoris	3.1	8 56	232	l	μ Ursæ Majoris	3.2	12 32	304
β Cancri	3.8	9 49	234		ψ Ursæ Majoris	3.2	13 14	311
ε Hydræ	3.5	10 8	226		γ Ursæ Majoris	2.5	13 20.	333
ζ Hydræ		10 14	225		12 Canum Venat.	2.9	15 10	298
o Leonis	3.8	11 17	236		η Ursæ Majoris	1.9	15 39	322
α Leonis	1.3	11 52	242		γ Boötis	3.0	16 47	298
ρ Leonis		12 7	235	i i	β Boötis	3.6	17 15	302
β Virginis	3.8	12 43	210	ľ	η Herculis	3.6	18 57	299
δ Virginis	3.7	13 59	216		β Draconis ,	3.0	19 10	329
ε Virginis		14 43	240	ł	π Herculis	3.4	19 31	295
η Boötis		15 55	257	i	γ Draconis	2.4	19 42	326
ε Serpentis		17 1	219	İ	α Lyræ	0·I	20 52	298
α Serpentis		17 6	226		δ Cygni	3.0	21 51	311
λ Ophiuchi		17 23	209	1	γ Cygni	2.3	22 36	301
γ Serpentis	1	17 51	251		α Cygni	1.3	22 48	311
x Ophiuchi	,	18 32	235		540			
β Ophiuchi	1 . 1	18 53	219	ŧ				
α Ophiuchi	1	19 20	243		•			-
72 Ophiuchi δ Aquilæ		19 40	234		GK.			
1 × 1:1	1	20 54	245					
0 4	1 0.0	21 14	225					
α Aquilæ	1 0.0	21 21	232				7.	
γ Aquilæ	2.8	21 23	237	9				
ε Delphini	4.0	22 12	238		* *			
ε Pegasi	2.5	23 18	235					
0 1 06001 111	- ,	-3	33				+	1
	1	1				1	1	
	!			7				
		_			!		Ŧ	
	1				144		1	
		1			ı		(
4.4				1	0.20			
	1	<u> </u>				<u> </u>		

Star.	Mag.	L. S.T.	Az.
Star. β Persei γ Persei ε Persei δ Persei η Aurigæ α Aurigæ	2.6 1.9 3.1 3.0 3.1 3.3	h. m. 0 50 I 29 I 30 I 38 I 40 2 48 3 8	57 37 27 58 42 56 45
θ Aurigæ β Aurigæ α Geminorum ι Ursæ Majoris θ Ursæ Majoris μ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris	2·7 2·1 2·0 3·1 3·3 3·2 2·5 2·9	3 37 3 49 5 11 7 0 7 50 8 5 9 0 10 30	45 64 47 74 39 30 54 47 24 60
η Ursæ Majoris γ Boötis β Boötis η Herculis π Herculis β Draconis γ Draconis α Lyræ δ Cygni γ Cygni α Cygni	1.9 3.0 3.6 3.4 3.0 2.4 0.1 3.0 2.3 1.3	11 55 12 13 12 46 14 25 14 55 15 55 16 15 16 18 17 37 18 5 18 34	36 61 56 60 64 29 32 60 47 58
μ Andromedæ γ Andromedæ	3.9	22 36 23 47	62 54
•			

A		<u> </u>	
Star.	Mag.	L. S.T.	Az.
		b. m.	0
γ Ceti	3.7	1 31	144
o Tauri	3.8	I 42	125
α Ceti	2.8	1 43	140
δ Ceti	4.0	1 50	157
π^3 Orionis	3.3	3 15	131
γ Orionis	1.7	3 53	132
α Orionis	1.2	4 19	129
ξ Geminorum	3⋅4	4 49	114
β Canis Minoris	3.1	5 46	126
α Canis Minoris	0.2	6 12	135
β Cancri	3.8	6 32	124
ε Hydræ	3.2	7 13	131
ζ Hydræ	3.3	7 23	133
o Leonis α Leonis	3.8	7 54	121
	1.3	8 14 8 48	116
ρ Leonis β Virginis	3·8	8 48 10 41	123 146
ε Virginis	3.0	11 11	118
η Virginis	4.0	11 33	158
δ Virginis	3.7	11 37	141
γ Serpentis	3.9	13 54	108
α Serpentis	2.8	14 11	131
ε Serpentis	3.8	14 28	137
х Opĥiuchi	3.4	15 13	123
λ Ophiuchi	3.9	15 23	146
α Ophiuchi	2·1	15 40	115
β Ophiuchi	2.9	16 21	138
72 Ophiuchi	3.7	16 23	123
γ Aquilæ	2.8	17 58	121
α Aquilæ	0.9	18 10	126
δ Aquilæ	3.4	18 11	143
β Aquilæ	3.9	18 24	132
ε Delphini	4.0	18 43	119
ε Pegasi ζ Pegasi	2.5	19 59	123
	3.6	20 53	IZI
γ Piscium ω Piscium	3·9 4·0	22 4	I44 I32
η Piscium	3.7	23 30	110
η 2 1000αποιι.		20 00	
		,	l
_ 1			-
		==	
			-
<u>.</u>			
			1
		-	
			l

	Mag.	L. S.T.	Az.
-	<u> </u>	h. m.	0
ζ Pegasi	3.6	·O 2I	239
γ Piscium	3.9	0 22	216
ω Piscium	4.0	I 23	228
γ Pegasi	2.9	2 5	250
δ Celi	4.0	3 20	203
γ Ceti	3.7	3 47	216
α Ceti	2.8	4 13	220
o Tauri	3.8	4 58	235
π^3 Orionis	3.3	6 15	229
γ Orionis	1.7	6 49	228
α Orionis	1.2	7 23	231
ξ Geminorum	3.4	8 33	246
α Canis Minoris	0.5	8 58	225
β Canis Minoris	3.1	9 0	234
β Cancri	3.8	9 52	236
ε Hydræ	3.5	10 11	229
ζ Hydræ	3.3	10 18	227
o Leonis	3.8	II 20	239
α Leonis ·	1.3	11 54	244
ρ Leonis	3.9	I2 I0	237
β Virginis	3.8	12 51	214
η Virginis	4.0	12 59	202
δ Virginis	3.7	14 5	219
ε Virginis	3.0	14 45	242
ε Serpentis	3.8	17 6	223
α Serpentis	2.8	17 9	229
λ Ophiuchi	3.9	17 31	214
х Ophiuchi	3.4	18 35	237
β Ophiuchi	2.9	18 57	222
α Ophiuchi	2·I	19 22	245
2 Ophiuchi	3.7	19 43	237
δ Aquilæ	3.4	20 31	217
β Aquilæ	3.9	21 18	228
α Aquilæ	_	21 24	234
γ Aquilæ	2.8	21 26	239
ε Delphini		22 15	24 I
ε Pegasi	2.5	23 21	237
	1		
•			
	1		
			-
	1		
	1	,	
	1		1

Star.	Mng.	L. S.T.	Az.
μ Andromedæ γ Andromedæ γ Persei β Persei δ Persei ε Persei α Aurigæ η Aurigæ β Aurigæ σ Aurigæ β Aurigæ υτε Majoris υτε Majoris υτε Majoris υτε Majoris υτε Majoris γ υτε Majoris γ υτε Majoris γ υτε Majoris γ υτε Majoris γ υτε Majoris γ υτε Μαjoris γ	3.9 2.3 3.1 1.9 2.6 3.1 2.7 2.0 3.1 2.7 2.0 3.1 3.3 3.2 2.5 2.9 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6	h. m. 3 8 4 11 4 28 5 9 5 16 5 34 6 7 14 7 59 8 11 9 47 10 48 11 4 12 29 13 10 15 8 15 33 16 45 17 12 18 55 17 12 18 55 19 3 19 29 19 35 20 50 21 47 22 33 22 44	298 306 333 323 303 318 302 315 304 319 296 321 336 300 324 299 304 300 321 296 328 300 313
		-	

Star.	Mag.	L. S.T.	Az.
β Persei	2.6 1.9 3.1 3.0 3.1 3.3 3.2 2.7 2.0 3.1 3.3 3.2 3.2 3.3 3.2 3.6 3.6 3.6 3.6 3.6 3.1 3.9 2.3	h. m. 0 53 1 36 1 40 1 41 1 44 2 52 3 13 3 40 3 53 5 12 7 58 8 9 4 10 39 12 2 12 16 12 49 14 28 14 57 16 4 16 21 16 23 17 41 18 8 18 38 20 23 22 39 22 49 23 51	55 34 24 57 40 54 43 45 45 45 45 45 45 45 45 45 45

			, —
Star.	Mag.	L. S.T.	Az.
<u> </u>		h. m.	•
γ Ceti	3.7	I 25	140
α Ceti	2.8	1 38	137
o Tauri	3⋅8	1 39	123
δ Ceti	4.0	1 41	152
π^3 Orionis	3.3	3 12	128
γ Orionis	1.7	3 49	129
α Orionis	1.5	4 15	126
δ Orionis	2.2	4 37	154
β Canis Minoris	3.1	5 43	123
α Canis Minoris β Cancri	0.5	6 7	132
' TT 1	3.8	,	121
Y TT3	3.2	7 9 7 19	130
o Leonis	3.8	7 19 7 51	119
α Leonis	1.3	8 12	114
ρ Leonis	3.9	8 45	120
β Virginis	3.8	10 35	143
ε Virginis	3.0	11 9	116
η Virginis	4.0	II 24	153
δ Virginis	3.7	11 31	137
ζ Virginis	3.4	12 38	153
γ Serpentis	3.9	13 52	106
α Serpentis	2.8	14 7	128
ε Serpentis	3.8	14 23	134
κ Ophiuchi λ Ophiuchi	3.4	15 11	IZI
0 0-1:-1:	3.9	15 17 16 16	143
72 Ophiuchi	2.9	16 20	135
γ Aquilæ	3·7 2·8	17 56	119
δ Aquilæ	3.4	18 5	140
α Aquilæ	0.9	18 7	123
β Aquilæ	3.9	18 20	130
ε Delphini	4.0	18 41	117
ε Pegasi	2.5	19 57	121
ζ Pegasi	3.6	20 50	118
α Aquarii	3.2	21 14	156
γ Piscium	3.9	21 59	141
ω Piscium	4.0	22 23	129
η Piscium	3.7	23 29	108
			İ
			+
	4		
		T	Ŧ

		-	
Star.	Mag.	L. S.T.	Az.
		h. m.	•
ζ Pegasi	3.6	0 24	242
γ Piscium	3.9	0 27	219
ω Piscium	4.0	I 27	231
γ Pegasi	2.9	2 7	252
δ Ceti	4.0	3 29	208
γ Ceti	3.7	3 53	220
α Ceti	2.8	4 18	223
o Tauri π^3 Orionis	3.8	5 I 6 18	237
δ Orionis	3.3	1 -	232
1	2.5	6 19	231
α Orionis	1.2	7 27	234
β Canis Minoris	3.1	9 3	237
α Canis Minoris	0.5	9 3	228
β Cancri	3.8	9 55	239
ε Hydræ	3.2	10 15	232
ζ Hydræ	3.3	10 23	230
o Leonis	3.8	11 23	241
α Leonis	1.3	11 56	246
ρ Leonis	3.9	12 13	240
β Virginis	3.8	12 57	217
η Virginis	4.0	13 8	207
δ Virginis	3.7	14 11	223
ζ Virginis	3.4	14 24	207
ε Virginis		14 47	244
ε Serpentis		17 11	226
α Serpentis		17 13	232
λ Ophiuchi γ Ophiuchi	,	17 37	217
0.0.1	1 : :	19 2	239
72 Ophiuchi	1	19 46	239
δ Aquilæ	3.4	20 37	220
β Aquilæ	1	21 22	230
γ Aquilæ	2.8	21 28	241
α Aquilæ	0.0	21 28	237
ε Delphini	4.0	22 17	243
α Aquarii		22 50	204
ε Pegasi	2.2	23 23	239
j	l		
ĺ			
4			- 4
9			
	-		
	1-		
	,		
,			+

Star.	Mag.	L. S.T.	Az.
		h. m.	0
n Pegasi	<i>3</i> · <i>1</i>	0 55	283
μ Andromedæ	3.9		300
β Andromedæ	2.4	3 5 3 21	294
γ Andromedæ	2.3	4 7	308
γ Persei	<i>3</i> · <i>1</i>	4 18	3 36
α Persei	1.9	5 2	326
β Persei	2.6	5 13	305
δ Persei	3.1	5 30	320
ε Persei	3.0	6 3	303
α Aurigæ	0.2	7 9	317
η Aurigæ	3.3	7 10	306
β Aurigæ	2·I	7 55	315
θ Aurigæ	2.7	8 8	298
α Geminorum	2.0	9 46	288
ι Ursæ Majoris	3.1	10 42	323
θ Ursæ Majoris	3.3	10 56	332
μ Ursæ Majoris	3.5	12 25	308
ψ Ursæ Majoris	3.5	13 6	315
12 Canum Venat.	2.9	15 5	301
η Ursæ Majoris	1.9	15 26	326
γ Boötis	3.0	16 42	301
β Boötis	3.6	17 9 18 52	305 302
η Herculis	3.6		_
β Draconis $π$ Herculis	3.0		334
	3·4 2·4	19 27 19 27	297 331
γ Draconis α Lyræ	0·I	20 47	301
δ Cygni	3.0	21 43	314
γ Cygni	2.3	22 30	304
α Cygni	1.3	22 40	315
w 0,6m	- 3	, 4-	اردا
•			ŀ
			ĺ
	_		
			- 1
3.5			İ
	-		
		}	ĺ
- 20			

		-2)-	
			1

NE. QUADRANT SE. QUADRANT

Star.	Mag.	L.S.T.	Az.	Star.
β Persei α Persei ε Persei α Persei η Aurigæ α Aurigæ α Geminorum 40 Lyncis ι Ursæ Majoris θ Ursæ Majoris ψ Ursæ Majoris μ Ursæ Majoris γ Boötis β Boötis β Boötis η Herculis α Lyræ γ Draconis α Cygni γ Cygni α Cygni α Cygni α Andromedæ α Andromedæ β Αναγραμεία β Σεν β Δεν	2·6 1·9 3·1 3·2 2·7 2·1 2·3 3·3 3·2 2·9 3·6 3·4 2·3 3·1 2·2 3·3 3·1 2·3 3·1 2·3 3·1 2·3 3·1 2·3 3·1 3·2 3·3 3·3 3·3 3·3 3·3 3·3 3·3	h. m. 0 56 1 42 1 44 1 50 2 55 3 18 3 42 3 58 5 14 7 12 8 13 9 10 42 12 19 12 52 14 31 15 0 42 16 32 17 45 18 13 20 24 21 49 22 41 22 51 23 55	53 32 55 37 52 41 60 43 65 57 53 57 58 59 50 50 50 50 50 50 50 50 50 50	γ Ceti α Ceti δ Ceti δ Ceti ο Tauri π³ Orionis γ Orionis δ Orionis δ Orionis ε Orionis β Canis Μ α Canis Μ β Cancri ε Hydræ ο Leonis α Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Virginis α Serpent κ Ophiucl γ Ophiucl γ Aquilæ δ Aquilæ δ Aquilæ β Aquilæ ε Pegasi α Aquarii γ Piscium γ Piscium η Piscium η Piscium

Star.	Mag.	L.S.T.	Az.
147		h. m.	0
·η Pegasi	3.1	0 54	285
α Andromedæ μ Andromedæ	2.2	2 19	283 302
μ Andromedæ β Andromedæ	3·9 2·4	3 3 3 19	296
γ Andromedæ	2.3	4 3	310
β Trianguli	3.1	4 18	295
α Persei	1.9	4 56	328
β Persei δ Persei	2·6	5 10 5 24	307 323
ε Persei	3.0	6 0	305
α Aurigæ	0.2	7 4	319
η Aurigæ	3.3	7 7	308
β Aurigæ	2·I	7 50 8 6	317
θ Aurigæ α Geminorum	2.7	9 44	290
Ursæ Majoris	3.1	10 37	325
θ Ursæ Majoris	3.3	10 47	335
40 Lyncis	3.3	11 30	295
μ Ursæ Majoris ປ Ursæ Majoris	3.2	12 21 13 1	310 317
ψ Ursæ Majoris 12 Canum Venat.	3.2	13 I 15 2	303
η Ursæ Majoris	1.9	15 20	328
γ Boötis	3.0	16 39	303
β Boötis	3.6	17 6	307
η Herculis γ Draconis	3·6 2·4	18 49 19 18	304 334
γ Draconis π Herculis	3.4	19 24	299
α Lyræ	0·1	20 44	303
δ Cygni	3.0	21 39	316
γ Cygni	2.3	22 27	306
α Cygni	1.3	22 35	317
9,			
120			
'			
İ			
	-	,	
	÷		
		j	
*			
	<u> </u>		

	Štar.	Mag.	L. S.T.	Az.	
۱			h. m.	0	
١	β Persei	2.6	, 1 0	51	
١	ε Persei	3.0	I 47	53	
ı	α Persei	1.9	I 50	29	
ı	δ Persei η Aurigæ	3·3	1 56 2 59	35	
	α Aurigæ	0.2	3 23	50 39	
	0 Aurigæ	2.7	3 45	58	
	β Aurigæ	2·I	4 3	41	
	a Geminorum	2.0	5 16	69	
	40 Lyncis	3.3	7 4	63	
	ι Ursæ Majoris μ Ursæ Majoris	3.1	7 18 8 17	33	
	μ Ursæ Majoris ψ Ursæ Majoris	3·2	8 17 9 14	48 41	
	12 Canum Venat.	2.9	10 45	55	
	η Ursæ Majoris	1.9	12 16	29	
	γ Boötis	3.0	I2 22	55	
	β Boötis	3.6	12 56	51	
	δ Boōtis η Herculis	3.5	12 59	66	
	π Herculis	3·6 3·4	14 34 15 2	54	
	α Lyræ	0.1	16 27	59	
	γ Draconis	2.4	16 42	55 23	
	δ Cygni	3.0	17 50	42	
	γ Cygni	2.3	18 14	53	
	ε Cygni	2.6	18 30 18 48	66	
	α Cygni η Pegasi	3·1	18 48 20 25	41 73	
	α Andromedæ	2.2	21 50	76	
	μ Andromedæ	3.9	22 44	56	
	β Andromedæ	2.4	22 53	63	
	β Trianguli	3.1	23 53	64	
	γ Andromedæ	2.3	23 59	48	
		**			
			1		
,					
			-		
	11		-	*	
		}			
	2 0				
1		1	I		

Star.	Mag.	L. S.T.	Az.
γ Ceti δ Ceti α Ceti α Ceti σ Tauri π³ Orionis γ Orionis δ Orionis δ Orionis γ Orionis γ Orionis γ Orionis γ Orionis γ Orionis γ Orionis γ Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Leonis γ Hydræ γ Leonis γ Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Ophiuchi λ Ophiuchi λ Ophiuchi η Serpentis γ Aquilæ δ Aquilæ δ Aquilæ δ Aquilæ β Aquilæ	3.7 4.8 3.7 2.8 3.7 2.5 4.7 2.5 3.6 3.7 3.8 3.8 3.8 3.8 3.8 3.8 3.8 3.8	h. m. 1 15 1 27 1 30 1 34 3 5 3 42 4 21 4 30 4 43 5 37 6 24 7 7 46 8 8 40 10 25 11 36 12 23 14 15 3 15 6 6 7 16 14 17 32 17 56 18 13 19 52 17 56 18 13 19 52 20 58 21 22 21 50 22 16	134 144 131 118 123 124 122 145 155 149 152 117 124 125 114 110 116 136 145 131 148 144 129 159 116 136 129 116 136 147 148 147 151 148 147 151 151 151 151 151 151 151 151 151 15

NW. QUADRANT

	1		
Star.	Mag.	L.S.T.	Az.
	i -	h. m.	i
ζ Pegasi	3.6	0 28	246
γ Piscium	3.9	0 36	226
ω Piscium	4.0	I 34	236
δ Ceti	4.0	3 43	216
γ Ceti	3.7	4 3	226
α Ceti	2.8	4 26	229
o Tauri	3.8	5 6	242
η Orionis	3.4	6 10	205
π^3 Orionis	3.3	6 25	237
ζ Orionis	2.0	6 31	208
ε Orionis	1.7	6 33	211
δ Orionis	2.5	6 35	215
γ Orionis	1.7	6 59	236
α Orionis	I • 2	7 33	238
β Canis Minoris	3.1	9 9	241
α Canis Minoris	0.2	9 10	233
β Cancri	. 3.8	10 0	243
ε Hydræ		10 22	236
·ζ Hydræ	3.3	10 29	235
o Leonis	3.8	11 28	246
α Leonis	1.3	12 0	250
ρ Leonis	3.9	12 18	244
β Virginis	3.8	13 7	224
η Virginis	4.0	13 23	215
γ Virginis	3.0	13 40	212
δ Virginis	1	14 20	229 216
ζ Virginis	3.4	14 39 16 27	201
μ. Serpentis	1 - 0		231
ε Serpentis	- 0	17 19	236
α Serpentis λ Ophiuchi		17 48	224
^~1· 1·	1 1 1	18 42	244
α ⁺	3.4	19 2	203
η Serpentis β Ophiuchi	1	19 11	231
72 Ophiuchi	3.7	19 52	244
δ Aquilæ	3.4	20 46	226
θ Aquilæ	1	21 9	212
β Aquilæ	3.9	21 29	235
γ Aquilæ	2.8	21 32	246
α Aquilæ	0.9	21 33	241
α Aquarii	3.2	23 6	213
γ Aquarii	4.0	23 12	209
ε Pegasi	2.5	23 28	244
	'		
		100	

	. —		
Star.	Mag.	L.S.T.	Az.
η Pegasi α Andromedæ μ Andromedæ γ Andromedæ γ Andromedæ γ Andromedæ γ Persei γ Persei γ Persei γ Persei γ Aurigæ γ Aurigæ γ Aurigæ γ Aurigæ μ Ursæ Majoris 40 Lyncis μ Ursæ Majoris 12 Canum Venat. η Ursæ Majoris 12 Canum Venat. η Ursæ Majoris γ Boötis β Boötis β Boötis γ Praconis γ Draconis γ Draconis γ Cygni α	3.12 3.9 2.4 2.3 3.1 1.96 3.1 2.0 3.1 2.0 3.1 2.0 3.3 3.2 2.9 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6	h. m. 0 53 2 18 3 0 3 17 3 59 4 17 4 48 5 18 5 57 6 59 7 3 7 45 8 9 42 10 30 11 28 12 17 12 56 14 59 15 12 16 36 17 2 17 25 18 46 19 8 19 22 20 41 21 34 22 24 22 30 22 56	287 284 304 297 312 296 331 309 325 307 321 319 302 297 312 319 305 337 301 305 337 301 305 337 301 305 318 307 318

			
Star.	Mag.	L. S.T.	Az.
γ Andromedæ β Persei ε Persei δ Persei δ Persei γ Aurigæ γ Aurigæ β Aurigæ β Aurigæ α Geminorum 40 Lyncis ι Ursæ Majoris μ Ursæ Majoris μ Ursæ Majoris γ Ursæ Majoris γ Boötis β Boötis β Boötis γ Herculis α Lyræ γ Cygni γ Cygni γ Cygni α Cygni γ Pegasi α Andromedæ μ Andromedæ β Andromedæ β Andromedæ β Andromedæ β Trianguli	2·3 2·6 3·0 1·9 3·1 2·9 3·3 2·7 2·1 2·9 3·6 3·5 3·6 3·3 3·3 2·3 2·3 3·3 2·3 3·3 2·3 3·3 2·3 3·4 3·3 3·4 3·3 3·4 3·4 3·4 3	h. m. 0 3 1 4 1 50 1 59 2 3 2 41 3 3 29 3 48 4 8 5 7 7 26 8 21 9 10 49 12 25 12 26 13 1 14 37 15 5 16 31 16 44 17 56 18 18 53 20 27 21 52 22 47 22 56 23 55	6 46 49 51 26 32 65 48 37 57 39 67 61 39 53 26 53 49 64 53 57 57 57 57 57 57 57 64 53 57 64 57 57 57 64 57 65 66 67 67 67 67 67 67 67 67 67 67 67 67
4.			

Star.	Mag.	L. S.T.	Az.		
		h. m.	0		
γ Ceti	3.7	1 10	131		
δ Ceti	4.0	I 2I	140		
α Ceti	2.8	1 26	129		
o Tauri	3.8	I 32	116		
π^3 Orionis	3.3	3 2	121		
γ Orionis	1.7	3 39	I 22		
α Orionis	1.5	4 6	119		
δ Orionis	2.5	4 15	141		
η Orionis	3.4	4 22	150		
ε Orionis	1.7	4 24	144		
ζ Orionis	2.0	4 35	148		
β Canis Minoris α Canis Minoris	3.1	5 35	116		
	0·5 3·8	5 57 6 22	124 115		
TY 1	-	_	115		
ε Hydræ ζ Hydræ	3·3	6 59	121		
30 Monocerotis	4.0		155		
a Leonis	1.3	7 34	108		
ρ Leonis	3.9	8 38	114		
β Virginis	3.8	IO 2I	133		
η Virginis	4.0	11 3	141		
δ Virginis	3.7	11 18	128		
γ Virginis	3.0	11 29	144		
ζ Virginis	3.4	12 17	141		
α Serpentis	2.8	13 57	121		
ε Serpentis	3.8	14 11	126		
μ Serpentis	3.6	14 53	153		
λ Ophiuchi	3.9	15 1	133		
х Ophiuchi	<i>3</i> ·4	<i>15 3</i>	114		
δ Ophiuchi	3.0	15 21	155		
β Ophiuchi	2.9	16 4	126		
72 Ophiuchi	3.7	16 12	114		
η Serpentis δ Aquilæ	3.4	17 22	151		
α Aquilæ	3·4 0·9	17 52	131 116		
O A amila	3.9	17 59 18 10.	122		
A A anila	3.4	18 59	144		
ε Pegasi	2.5	19 50	114		
α Aquarii	3.2	20 51	143		
γ Aquarii	4.0	21 14	147		
γ Piscium	3.9	21 45	132		
ω Piscium	4·ó	22 14	122		
		1			
19					
			l		
*					

NW. QUADRANT

Star.	Mag.	L.S.T.	Λz.
		h. m.	0
γ Piscium	3.9	0 41	228
ω Piscium	4.0	1 36	238
δ Ceti	4.0	3 49	220
γ Ceti	3.7	4 8	229
α Ceti	2.8	4 30	231
o Tauri	3.8	5 8	244
η Orionis	3.4	6 18	210
π^3 Orionis	3.3	6 28	239
ζ Orionis	2.0	6 39	212
ε Orionis	1.7	6 40	216
δ Orionis	2.5	6 41	219
γ Orionis	1.7	7 2	238
α Orionis	I·2	7 36	24 I
30 Monocerotis	4.0	9 10	205
β Canis Minoris	3.1	9 11	244
α Canis Minoris	0.5	9 13	236
β Cancri	3.8	IO 2	245
ε Hydræ	3.2	10 25	239
ζ Hydræ	3.3	10 32	238
α Leonis	1.3	12 1	252
ρ Leonis	3.9	12 20	246
β Virginis	3.8	13 11	227
η Virginis	4.0	13 29	219
γ Virginis	3.0	13 47	
δ Virginis	3.7	14 24	232
ζ Virginis	3.4	14 45	219
μ Serpentis δ Ophiuchi	3·6 3·0	16 37 16 59	207
	2.8	16 59 17 23	239
α Serpentis	3.8		234
ε Serpentis λ Ophiuchi	3.9	17 23	227
O 7 . 7 .	3.4	17 53 18 45	246
	3.4	19 12	209
η Serpentis β Ophiuchi	2.9	19 14	234
72 Ophiuchi	3.7	19 54	246
δ Aquilæ	3.4	20 50	229
θ Aquilæ	3.4	21 15	216
β Aquilæ	3.9	21 32	238
α Aquilæ	0.9	21 35	244
α Aquarii	3.2	23 13	217
γ Aquarii	4.0	23 20	213
ε Pegasi	2.5	23 30	246
			. 1
1	III.		

Star.	Mag.	L.S.T.	Az.
η Pegasi α Andromedæ μ Andromedæ γ Andromedæ γ Andromedæ β Trianguli α Persei β Persei α Aurigæ η Aurigæ β Aurigæ α Geminorum ι Ursæ Majoris μ Ursæ Majoris μ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Ursæ Majoris γ Herculis α Lyræ β Boötis β Boötis γ Lyrae γ Cygni α	3·1 2·2 3·9 2·4 2·3 3·1 1·9 2·6 3·3 2·7 2·0 3·3 3·2 2·9 3·6 3·5 3·6 3·6 3·6 3·7 2·6 3·7 2·6 3·6 3·7 2·6 3·6 3·6 3·6 3·6 3·6 3·6 3·6 3	h. m. 0 51 2 16 2 57 3 14 3 55 4 15 4 39 5 11 5 54 6 53 6 59 7 40 8 9 40 10 22 11 25 12 13 12 51 14 55 316 58 17 23 18 43 19 19 20 37 21 28 22 25 54	288 285 305 299 314 298 334 311 328 309 323 312 295 321 303 293 314 307 331 296 307 307 294 321 309 321 309 321 309 321 309 321 309 321 309 321 309 321 309 321 309 321 309 309 309 309 309 309 309 309 309 309

NE. QUADRANT

			
Star.	Mag.	L.S.T.	Az.
γ Andromedæ β Persei ε Persei λ Persei γ Aurigæ η Aurigæ β Aurigæ β Aurigæ α Geminorum 40 Lyncis ι Ursæ Majoris μ Ursæ Majoris μ Ursæ Majoris 12 Canum Venat. γ Boötis β Boötis β Boötis γ Herculis η Herculis η Herculis α Lyræ γ Cygni γ Cygni γ Cygni ς Cygni α Cygni α Cygni η Pegasi α Andromedæ μ Andromedæ β Andromedæ β Andromedæ β Trianguli	2·3 2·6 3·0 3·1 2·9 3·3 3·2 2·7 2·1 2·0 3·3 3·1 3·2 2·3 3·6 4 0·3 3·4 1 3·3 2·3 2·3 3·4 1 2·2 3·9 3·3 3·1 2·3 3·4 3·5 2·6 3·6 3·6 4 3·7 2·7 3·7 3·7 3·7 3·7 3·7 3·7 3·7 3	h. m. 7 1 8 1 54 2 10 2 43 3 7 3 35 3 51 4 14 5 19 7 34 8 25 9 552 12 29 13 4 14 28 14 41 15 34 16 47 18 22 18 35 18 59 20 28 58 21 53 -22 50 22 58 23 58	9 44 47 49 30 63 46 34 55 37 65 60 27 44 37 51 52 47 66 51 55 51 64 37 962 37 70 73 53 59 60

		<u> </u>	
Star.	Mag.	L. S.T.	Az.
		h. m.	0
γ Ceti	3.7	16	129
γ Ceti δ Ceti	4.0	- 1 16	137
α Ceti	2.8	I 22	126
o Tauri	<i>3</i> ·8	1 30	114
π^3 Orionis	3.3	2 59	118
γ Orionis	1.7	3 37	I 20
α Orionis	I•2	4 4	117
δ Orionis η Orionis	2.5	4 10	138
η Orionis ε Orionis	3.4	4 15	146
ζ Orionis	1·7 2·0	4 19 4 28	141
β Canis Minoris	3·1	4 28 5 33	144 <i>114</i>
α Canis Minoris	0.5	5 54	122
ε Hydræ	3.2	6 57	119
ζ Hydræ	3.3	7 7	120
30 Monocerotis	4.0	7 25	150
a Leonis	1.3	7 ² 5 8 6	106
β Virginis	3.8	10 17	131
η Virginis δ Virginis	4.0	10 58	138
	3.7	11 15	126
γ Virginis ζ Virginis	3.0	11 23	140
ζ Virginis	3.4	12 12	138
α Serpentis	2.8	13 55	119
ε Serpentis	3.8	14 8	124
μ Serpentis λ Ophiuchi	3.6	14 45	149
δ Ophiuchi	3·9	14 57	130
ε Ophiuchi	3.3	15 12 15 24	150 154
β Ophiuchi	2.9	15 24 16 1	124
η Serpentis	3.4	17 14	147
δ Aquilæ	3.4	17 48	128
a Aquila	0 ∙9	17 56	114
β Aquilæ	3.9	18 7	120
λ Aquilæ	3.6	18 17	157
θ Aquilæ	3.4	18 53	141
α Aquarii	3.5	20 45	139
γ Aquarii	4.0	21 8	143
γ Piscium ω Piscium	3.9	21 41	129
ω Fiscium	4.0	22 II	120
			l
		1	l
,			l
92			
•			ł
	7		

				1
Star.	Mag.	L.S.T.	Az.	
	<u>, </u>	h. m.	0	l
γ Piscium ω Piscium	3·9 4·0	0 45 1 39	23I 240	
δ Ceti	4.0	3 54	223	l
γ Ceti	3.7	4 12	231	l
α Ceti	2.8	4 34	234	l
o Tauri	3⋅8	5 10	246	l
η Orionis	3.4	6 25	214	l
π^3 Orionis	3.3	6 31	242	l
ε Orionis	1.7	6 45 6 46	219	
δ Orionis ζ Orionis	2.5	6 46	222	ı
l * ^ ·	1.7		240	l
γ Orionis α Orionis	I·2	7 5 7 38	243	l
β Canis Minoris	3.1	9 13	246	1
α Canis Minoris	0.5	9 16	238	l
30 Monocerotis	4.0	9 19	210	
ε Hydræ	3.5	10 27	241	
ζ Hydræ	3.3	10 35	240	١
α Leonis	1.3	12 2	254	l
β Virginis	3.8	13 15	229	l
η Virginis	4.0	13 34	222	l
γ Virginis δ Virginis	3.0	13 53	234	l
ζ Virginis	3·7 3·4	14 50	222	
μ Serpentis	3.6	16 45	211	
ε Ophiuchi	3.3	17 4	206	ı
δ Ophiuchi	3.0	17 8	210	l
α Serpentis	2.8	17 25	241	l
ε Serpentis	3.8	17 25	236	l
λ Ophiuchi	3.9	17 57	230	l
β Ophiuchi	2.9	19 17	236	l
η Serpentis $λ$ Aquilæ	3·4 3·6	19 20	213	l
δ Aquilæ	3.4	20 54	232	
θ Aquilæ	3.4	21 21	219	
β Aquilæ		21 35	240	
a Aquila	3·9 0·9	21 38	246	l
α Aquarii	3.5	23 19	221	l
γ Aquarii	4.0	23 26	217	۱
				ĺ
				ĺ
				l
	4			
				46
•				

			
Star.	Mag.	L.S.T.	Az.
		h. m.	•
β Trianguli	3·1	0 0	58
γ Andromedæ	2.3	0 12	42
β Persei	2.6	I 12	45
ζ Persei	2.9	1 41	65
ε Persei	3.0	1 58	47
δ Persei	3.1	2 18	27
L Aurigæ	2.9	2 45	62
η Aurigæ	3.3	3 11	44
α Aurigæ θ Aurigæ	0.2	3 42	32
θ Aurigæ β Aurigæ	2·7 2·1	3 54 4 20	53
α Geminorum	2.0	4 20 5 21	34 64
40 Lyncis	3.3	7 12	58
Ursa Majoris	3.1	7 43	24
μ Ursæ Majoris	3.2	8 30	42
ψ Ursæ Majoris	3.5	9 30	35
12 Canum Venat.	2.9	10 55	49
γ Boötis	3.0	12 32	56
δ Boötis	3.5	13 6	61
β Boötis	3.6	13 8	45
ζ Herculis	3.0	14 30	64
η Herculis	3.6	14 45	49
ε Herculis	3.9	14 49	66
π Herculis	3.4	15 11	54
α Lyræ	0.1	16 37	5º .
γ Lyræ	3.3	16 49	63
δ Cygni	3.0	18 7	35
γ Cygni	2.3	18 26	47
ε Cygni α Cygni	2.6	18 37	61
η Pegasi	3·1	19 5 20 30	34 68
a Andromeda	2.2	21 54	71
δ Andromedæ	3.5	22 26	67
μ Andromedæ	3.9	22 54	51
β Andromedæ	2.4	23 I	57
,	•	"	''
*		le.	
			1
]	
	-		

Star.	Mag.	L. S.T.	Az.
Star. γ Ceti	3.7 4.8 3.7 4.9 3.9 1.2 5.3 4.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3	L.S.T. h. m. 1 11 1 19 1 28 2 57 3 35 4 6 9 4 12 4 14 4 23 5 5 5 5 7 7 18 8 10 53 11 13 12 8 13 53 14 38 14 54 15 5 58 17 45 18 18 48 20 42 21 38 22 21 38	Az. 126 134 124 112 116 117 115 136 143 154 138 141 120 117 118 146 104 128 135 124 137 135 117 122 145 128 146 150 122 144 126 118 152 138 136 156 140 126 117

Star.	Mag.	L. S.T.	Az.
		h. m.	0
γ Piscium	3.9	0 48	234
ω Piscium	4.0	I 42	243
δ Ceti	4.0	3 59	226
γ Ceti	3.7	4 14	234
α Ceti	2.8	4 37	236
o Tauri	3⋅8	5 12	248
β Eridani	2.9	5 56	206
η Orionis	3.4	6 31	217
π ³ Orionis	3.3	6 33 6 50	244 224
δ Orionis ε Orionis	2.5	6 50 6 50	222
ξ Orionis	1·7 2·0	6 51	219
	1.7	7 7	243
γ Orionis α Orionis	1.2	7 40	245
α Canis Minoris	0.5	9 19	240
30 Monocerotis	4.0	9 26	214
ε Hydræ	3.2	IO 29	243
ζ Hydræ	3.3	10 37	242
α Leonis	1.3	12 3	256
β Virginis	3.8	13 19	232
η Virginis	4.0	13 39	225
γ Virginis δ Virginis	3.0	13 57	223
δ Virginis	3.7	14 29	236
ζ Virginis	3.4	14 54 16 52	225
μ Serpentis	3·6 3·3	16 52 17 12	210
ε Ophiuchi δ Ophiuchi	3.0	17 15	214
δ Opniuchi α Serpentis	2.8	17 27	243
ε Serpentis	3.8	17 28	238
λ Ophiuchi	3.9	18 o	232
β Ophiuchi	2.9	19 20	238
η Serpentis	3.4	19 26	216
λ Aquilæ	3.6	19 56	208
δ Aquilæ	3.4	20 57	234
θ Aquilæ	3.4	21 26	222
β Aquilæ	3.9	21 37 22 12	242 204
β Aquarii	3.1		224
α Aquarii	3·2 4·0	23 23 23 32	220
γ Aquarii	4.0	25 52	220
	*]	
	+		
	<u> </u>	<u> </u>	

Star.	Mag.	L.S.T.	Az.
η Pegasi α Andromedæ μ Andromedæ γ Andromedæ γ Andromedæ β Trianguli β Persei α Persei α Aurigæ α Aurigæ β Aurigæ α Geminorum ι Ursæ Majoris ψ Ursæ Majoris ψ Ursæ Majoris 12 Canum Venat. γ Boötis β Boötis β Boötis β Boötis β Herculis α Herculis α Lyræ α Cygni .	3.1 2.2 3.9 2.4 2.3 3.1 2.6 3.9 2.1 2.7 2.3 3.2 2.9 3.6 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9	h. m. 0 48 2 14 2 50 3 46 4 10 4 55 4 56 6 57 6 6 59 7 54 9 5 5 6 6 50 17 18 35 18 46 5 19 13 20 31 21 17 22 12 22 13 22 49	292 289 309 303 318 302 315 333 313 295 328 316 298 326 307 296 336 302 318 325 311 310 315 299 311 296 294 306 316 297 325 317 328 329 329 329 329 329 329 329 329 329 329

NE. QUADRANT

Mag.	L.S.T.	Az.
Mng. 3·1 2·3 2·6 2·9 3·2 3·3 3·2 2·9 3·3 3·2 3·6 3·6 3·6 3·7 3·1 3·6 3·7 3·1 3·7 3·7 3·7 3·7 3·7 3·7	h. m. 0 3 0 17 1 16 1 43 2 2 48 3 16 3 49 3 57 4 27 5 23 7 15 8 35 9 37 10 59 12 21 12 36 13 9 14 51 15 14 16 51 18 14 16 51 18 14 18 30 18 40 19 11 15 14 16 20 32 21 56 22 28 22 57 23 4	Az. 57 40 43 63 45 60 42 29 51 32 56 40 32 47 65 48 59 43 62 47 64 52 48 61 32 67 69 65 49 55
	3·I 2·3 2·9 3·9 3·2 2·9 3·3 3·2 2·9 3·3 3·2 2·9 3·3 3·3 3·6 3·6 3·9 3·6 3·6 3·6 3·6 3·7 3·7 3·7 3·7 3·7 3·7 3·7 3·7	h. m. 3·1 0 3 2·3 0 17 2·6 1 16 2·9 1 43 3·0 2 2 2·9 2 48 3·3 3 16 0·2 3 49 2·7 3 57 2·1 4 27 2·0 5 23 3·3 7 15 3·2 8 35 3·2 9 37 2·9 10 59 3·8 12 21 3·0 12 36 3·5 13 9 3·6 13 12 3·0 14 32 3·6 14 49 3·9 14 51 3·1 16 51

Star.	Mag.	L.S.T.	Az.
		h. m.	0
γ Ceti	3.7	1 1	124
δ Ceti	4.0	17	131
α Ceti	2.8	1 16	122
π^3 Orionis	3.3	2 55	114
γ Orionis	1.7	3 33	115
δ Orionis	2.5	4 2	133
η Orionis β Eridani	3.4	4 3	139
β Eridani ε Orionis	2.9	4 4	149
ζ Orionis	1·7 2·0	4 9 4 18	135
Corionis	2.9	4 37	152
α Canis Minoris	0.2	5 49	117
ε Hydræ	3.2	6 53	115
ζ Hydræ	3.3	7 3	116
30 Monocerotis	4.0	7 12	143
α Leonis	1.3	8 3	102
β Virginis	3.8	10 10	126
η Virginis	4.0	10 49	132
δ Virginis	3.7	11 10	122
γ Virginis ζ Virginis	3.0	11 15	134
	3.4	12 4	132
α Serpentis ε Serpentis	2.8	13 51	115
Comontia	3·8 3·6	14 3 14 32	119 142
μ Serpentis λ Ophiuchi	3.9	14 32 14 51	126
δ Ophiuchi	3.0	14 59	143
ε Ophiuchi	3.3	15 9	146
β Ophiuchi	2.9	15 56	120
η Serpentis	3.4	17 2	140
δ Aquilæ	3.4	17 42	123
λ Aquilæ	3.6	18 1	148
β Aquilæ	3.9	18 3	116
θ Aquilæ	3.4	18 43	135
β Aquarii α Aquarii	3.1	20 32	152
	3·2 4·0	20 36 20 58	133
γ Aquarii γ Piscium	3.9		137 124
ω Piscium	4.0	21 35 22 6	115
	т.		
9 - 35 - 4			
		-	ŀ
,			
<u>'</u>			

Star.	Mag.	L.S.T.	Az.
		h. m.	0
γ Piscium	3.9	0 51	236
ω Piscium	4.0	I 44	245
δ Ceti	4.0	4 3	229
γ Ceti	3.7	4 17	236
α Ceti	2.8	4 40	238
β Eridani	2.9	6 4	211
Crionis	2.9	6 25	208
π^3 Orionis	3.3	6 35	246
η Orionis· δ Orionis	3.4	6 37	221
δ Orionis ε Orionis	2.5	6 54 6 55	227 225
ζ Orionis	2.0	6 56	222
γ Orionis	1.7	_	245
α Orionis	1.2	7 9 7 42	247
α Canis Minoris	0.5	9 21	243
30 Monocerotis	4·ó	9 32	217
ε Hydræ	3.5	10 31	245
ζ Hydræ	3.3	10 39	244
α Leonis	1.3	12 5	258
β Virginis	3.8	13 22	234
η Virginis	4.0	13 43	228
γ Virginis δ Virginis	3.0	14 I	226
	3.7	14 32	238
ζ Virginis	3.4	14 58 16 58	228
μ Serpentis ε Ophiuchi	3·6 3·3	16 58	214
I % O 1: 1:	3.0	17 21	217
α Serpentis	2.8	17 29	245
ε Serpentis	3.8	17 31	241
λ Ophiuchi	3.9	18 3	234
β Ophiuchi	2.9	19 22	240
η Serpentis	3.4	19 32	220
λ Aquilæ	3.6	20 3	212
δ Aquilæ	3.4	2I O	237
θ Aquilæ	3.4	21 31	225
β Aquilæ	3.9	21 39	244
β Aquarii	3.1	22 22	208
α Aquarii	3.2	23 28 23 36	227
γ Aquarii	4.0	23 36	223
	į		
0			
			- 1
J			

Star.	Mag.	L.S.T.	Az.
Star. 7 Pegasi α Andromedæ β Andromedæ β Andromedæ β Andromedæ β Andromedæ β Trianguli β Persei α Aurigæ α Aurigæ α Aurigæ α Geminorum β Aurigæ α Geminorum μ Ursæ Majoris ψ Ursæ Majoris ψ Ursæ Majoris 12 Canum Venat. γ Boötis α β Boötis α β Boötis α β Boötis α β Herculis α Herculis α Herculis α Lyræ α Cygni	3·1 2·2 3·5 3·9 2·3 3·1 2·6 3·9 2·1 2·7 2·3 3·3 2·9 3·3 3·5 3·6 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9	h. m. 0 46 2 12 2 47 3 41 4 7 4 50 5 55 56 33 6 46 6 56 7 51 11 59 12 33 14 45 16 35 16 46 17 15 18 31 18 44 19 3 19 10 20 27 21 1 0 22 7 22 46	Az. 293 291 295 311 305 320 303 317 315 297 3318 300 328 309 298 304 320 328 313 312 295 317 301 313 298 296 308 312 299 328 312 299 328 315 301
δ Boötis η Herculis ζ Herculis π Herculis π Lyræ γ Lyræ δ Cygni α Cygni γ Cygni	3·5 3·6 3·0 3·9 3·4 0·1 3·3 3·0 1·3 2·3	17 15 18 31 18 44 19 3 19 10 20 27 21 1 21 10 22 7 22 8	301 313 298 296 308 312 299 328 328 315
		,	*

LATITUDE 20º NORTH.

NE. QUADRANT SE. QUADRANT

Star.	Mag.	L.S.T.	Az.
		h. m.	0
γ Ceti	3.7	0 58	121
γ Ceti δ Ceti	4.0	1 4	129
α Ceti	2.8	I 14	119
β Eridani	2.9	3 57	145
δ Orionis	2.5	3 58	130
η Orionis	3.4	3 59	136
ε Orionis	1.7	4 5	132
ζ Orionis	2.0	4 14	135
ι Orionis	2.9	4 29	148
α Canis Minoris	0.2	5 47 7 1	115
$\zeta Hydra \dots$	3.3		114
30 Monocerotis	4.0	7 6	140
a Leonis	1.3	8 2	100
β Virginis	3⋅8	10 7	123
η Virginis	4.0	10 45	130
°	3.7	11 7	119
γ Virginis ζ Virginis	3.0	II II	132
	3.4	I2 O	129
ε Serpentis	3.8	14 0	117
μ Serpentis	3.6	14 27	138
λ Ophiuchi	3.9	14 48	123
δ Ophiuchi	3.0	14 53	139
ε Ophiuchi β Ophiuchi	3.3	15 3	143
	2.9	15 53	117
η Serpentis δ Aquilæ	3.4	16 58	137
3 A	3·4 3·6	17 39	IZI
0 1: 1	3.9	17 55 18 1	145
Δ Α Ξ:1	1		114
0 4	3·4	97	132
i. A	3.2	, ,	148
A:	4.0	20 33 20 53	131
γ Aquari γ Piscium	3.9	21 32	134 122
λ Aquarii	3.8	22 3	157
			197
		-	
-			
7.0			
	ľ		

Star. Mag. L. S.T. Az. γ Piscium 3.9 0.54 238 δ Ceti 4.0 4.6 231 γ Ceti 3.7 4.20 239 α Ceti 2.8 4.42 241 β Eridani 2.9 6.11 215 ι Orionis 2.9 6.33 212 η Orionis 2.5 6.58 230 ε Orionis 1.7 6.59 228 ζ Orionis 1.2 7.43 249 α Canis Minoris 0.5 9.23 245 30 Monocerotis 4.0 9.38 220 ζ Hydræ 3.3 10.41 246 α Leonis 1.3 12.6 260 β Virginis 3.8 13.25 237 η Virginis 3.7 14.35 241 ζ Virginis 3.7 14.35 241 ζ Virginis <td< th=""></td<>
γ Piscium 3.9 0 54 238 δ Ceti 4.0 4 6 231 γ Ceti 3.7 4 20 239 α Ceti 2.8 4 42 241 β Eridani 2.9 6 11 215 ι Orionis 2.9 6 33 212 η Orionis 2.5 6 58 230 ε Orionis 2.5 6 58 230 ε Orionis 1.7 6 59 228 ζ Orionis 1.2 7 43 249 α Canis Minoris 0.5 9 23 245 30 Monocerotis 4.0 9 38 220 ζ Hydræ 3.3 10 41 246 α Leonis 1.3 12 6 260 β Virginis 3.8 13 25 237 η Virginis 3.7 14 35 241 ζ Virginis 3.4 15 2 231
δ Ceti 4.0 4 6 231 γ Ceti 3.7 4 20 239 α Ceti 2.8 4 42 241 β Eridani 2.9 6 11 215 ε Orionis 2.9 6 33 212 η Orionis 2.5 6 58 230 ε Orionis 1.7 6 59 228 ζ Orionis 2.0 7 0 225 α Orionis 1.2 7 43 249 α Canis Minoris 0.5 9 23 245 30 Monocerotis 4.0 9 38 220 ζ Hydræ 3.3 10 41 246 α Leonis 1.3 12 6 260 β Virginis 3.8 13 25 237 η Virginis 3.7 14 35 241 ζ Virginis 3.4 15 2 231 μ Serpentis
δ Ceti 4.0 4 6 231 γ Ceti 3.7 4 20 239 α Ceti 2.8 4 42 241 β Eridani 2.9 6 11 215 ε Orionis 2.9 6 33 212 η Orionis 2.5 6 58 230 ε Orionis 1.7 6 59 228 ζ Orionis 2.0 7 0 225 α Orionis 1.2 7 43 249 α Canis Minoris 0.5 9 23 245 30 Monocerotis 4.0 9 38 220 ζ Hydræ 3.3 10 41 246 α Leonis 1.3 12 6 260 β Virginis 3.8 13 25 237 η Virginis 3.7 14 35 241 ζ Virginis 3.4 15 2 231 μ Serpentis
α Ceti 2.8 4 42 241 β Eridani 2.9 6 11 215 ε Orionis 2.9 6 33 212 η Orionis 3.4 6 41 224 δ Orionis 2.5 6 58 230 ε Orionis 1.7 6 59 228 ζ Orionis 1.7 6 59 228 ζ Orionis 1.2 7 43 249 α Canis Minoris 0.5 9 23 245 30 Monocerotis 4.0 9 38 220 ζ Hydræ 3.3 10 41 246 α Leonis 1.3 12 6 260 β Virginis 3.8 13 25 237 η Virginis 3.8 13 25 237 η Virginis 3.8 13 25 237 η Virginis 3.9 14 5 228 δ Virginis 3.7 14 35 241 ζ Virginis 3.7 14 35 241 ζ Virginis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
β Eridani 2.9 6 11 215 ι Orionis 2.9 6 33 212 η Orionis 3.4 6 41 224 δ Orionis 1.7 6 59 228 ζ Orionis 1.7 6 59 228 ζ Orionis 1.2 7 43 249 α Canis Minoris 0.5 9 23 245 30 Monocerotis 4.0 9 38 220 ζ Hydræ 3.3 10 41 246 α Leonis 1.3 12 6 260 β Virginis 3.8 13 25 237 η Virginis 3.8 13 25 237 η Virginis 4.0 13 47 230 γ Virginis 3.0 14 5 228 δ Virginis 3.7 14 35 241 ζ Virginis 3.4 15 2 231 μ Serpentis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
t Orionis 2.9 6 33 212 η Orionis 3.4 6 41 224 δ Orionis 2.5 6 58 230 ε Orionis 1.7 6 59 228 ζ Orionis 1.2 7 43 249 α Canis Minoris 0.5 9 23 245 30 Monocerotis 4.0 9 38 220 ζ Hydræ 3.3 10 41 246 α Leonis 1.3 12 6 260 β Virginis 3.8 13 25 237 η Virginis 3.8 13 25 237 η Virginis 4.0 13 47 230 γ Virginis 3.0 14 5 228 δ Virginis 3.7 14 35 241 ζ Virginis 3.4 15 2 231 μ Serpentis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
η Orionis 3·4 6 41 224 δ Orionis 2·5 6 58 230 ε Orionis 1·7 6 59 228 ζ Orionis 1·7 6 59 228 ζ Orionis 1·2 7 43 249 α Canis Minoris 0·5 9 23 245 30 Monocerotis 4·0 9 38 220 ζ Hydræ 3·3 10 41 246 α Leonis 1·3 12 6 260 β Virginis 3·8 13 25 237 η Virginis 3·8 13 25 237 η Virginis 3·0 14 5 228 δ Virginis 3·0 14 5 228 δ Virginis 3·4 15 2 231 μ Serpentis 3·6 17 3 221 ε Ophiuchi 3·3 17 25 217
δ Orionis 2.5 6 58 230 ε Orionis 1.7 6 59 228 ζ Orionis 1.7 6 59 228 α Orionis 1.2 7 43 249 α Canis Minoris 1.2 7 43 249 α Canis Minoris 4.0 9 38 220 ζ Hydræ 3.3 10 41 246 α Leonis 1.3 12 6 260 β Virginis 3.8 13 25 237 η Virginis 3.8 13 25 237 η Virginis 4.0 13 47 230 γ Virginis 3.0 14 5 228 δ Virginis 3.7 14 35 241 ζ Virginis 3.7 14 35 241 ζ Virginis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
ε Orionis 1.7 6 59 228 ζ Orionis 2.0 7 0 225 α Orionis 1.2 7 43 249 α Canis Minoris 0.5 9 23 245 30 Monocerotis 4.0 9 38 220 ζ Hydræ 3.3 10 41 246 α Leonis 1.3 12 6 260 β Virginis 3.8 13 25 237 η Virginis 4.0 13 47 230 γ Virginis 3.0 14 5 228 δ Virginis 3.7 14 35 241 ζ Virginis 3.4 15 2 231 μ Serpentis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
ζ Orionis 2.0 7 0 225 α Orionis 1.2 7 43 249 α Canis Minoris 0.5 9 23 245 30 Monocerotis 4.0 9 38 220 ζ Hydræ 3.3 10 41 246 α Leonis 1.3 12 6 260 β Virginis 3.8 13 25 237 η Virginis 4.0 13 47 230 γ Virginis 3.0 14 5 228 δ Virginis 3.7 14 35 241 ζ Virginis 3.4 15 2 231 μ Serpentis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
α Orionis 1·2 7 43 249 α Canis Minoris 0·5 9 23 245 30 Monocerotis 4·0 9 38 220 ζ Hydræ 3·3 10 41 246 α Leonis 1·3 12 6 260 β Virginis 3·8 13 25 237 η Virginis 4·0 13 47 230 γ Virginis 3·0 14 5 228 δ Virginis 3·7 14 35 241 ζ Virginis 3·4 15 2 231 μ Serpentis 3·6 17 3 221 ε Ophiuchi 3·3 17 25 217
α Canis Minoris 30 Monocerotis 4.0 9 38 220
30 Monocerotis 4.0 9 38 220
ζ Hydræ 3·3 10 41 246 α Leonis 1·3 12 6 260 β Virginis 3·8 13 25 237 η Virginis 4·0 13 47 230 γ Virginis 3·0 14 5 228 δ Virginis 3·7 14 35 241 ζ Virginis 3·4 15 2 231 μ Serpentis 3·6 17 3 221 ε Ophiuchi 3·3 17 25 217
α Leonis 1.3 12 6 260 β Virginis 3.8 13 25 237 η Virginis 4.0 13 47 230 γ Virginis 3.0 14 5 228 δ Virginis 3.7 14 35 241 ζ Virginis 3.4 15 2 231 μ Serpentis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
β Virginis 3.8 13 25 237 η Virginis 4.0 13 47 230 γ Virginis 3.0 14 5 228 δ Virginis 3.7 14 35 241 ζ Virginis 3.4 15 2 231 μ Serpentis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
η Virginis 4.0 13 47 230 γ Virginis 3.0 14 5 228 δ Virginis 3.7 14 35 241 ζ Virginis 3.4 15 2 231 μ Serpentis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
ζ Virginis 3.4 15 2 231 μ Serpentis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
ζ Virginis 3.4 15 2 231 μ Serpentis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
ζ Virginis 3.4 15 2 231 μ Serpentis 3.6 17 3 221 ε Ophiuchi 3.3 17 25 217
ε Ophiuchi 3·3 17.25 217
δ Ophiuchi 3.0 17 27 221
ε Serpentis 3.8 17 34 243
λ Ophiuchi 3.9 18 6 237
β Ophiuchi 2.9 19 25 243 7 Serpentis 3.4 19 37 223
λ Aquilæ 3.6 20 9 215 δ Aquilæ 3.4 21 3 239
θ Aquilæ 3.4 21 35 228
β Aquilæ 3.9 21 41 246
β Aquarii 3·1 22 29 212
α Aquarii 3.2 23 31 229
λ Aquarii 3.8 23 33 203
γ Aquarii 4.0 23 41 226
1 1 1

	1.7	7.00	
Star.	Mag.	L.S.T.	Az.
		h. m.	0
β Trianguli	3.1	0 9	53
γ Andromedæ	2.3	0 28	35
β Persei	2.6	1 26	39
ζ Persei	2.9	I 47	59
ε Presei	3.0	2 11	41
ι Aurigæ	2.9	2 53	56
β Tauri	<i>1</i> ·8	3 16	66
η Aurigæ	3.3	3 26	37
θ Aurigæ	2.7	4 5	47
β Aurigæ	2·I	4 4 ^I	26
α Geminorum	2.0	5 28	58
40 Lyncis	3.3	7 21	52
μ Ursæ Majoris	3.5	8 46	35
ψ Ursæ Majoris	3.5	9 52	26
12 Canum Venat.	2.9	11 8	43
ρ Boötis	3.8	12 26	61
γ Boötis	3.0	12 44	43
δ Boötis	3.2	13 14	55
β Boötis	3.6	13 22	39
ζ Herculis	3.0	14 37	59
ε Herculis	3.9	14 55	61
η Herculis	3.6	14 57	42
π Herculis	3.4	15 22	48
α Lyræ	0.1	16 49	43
γ Lyræ	3.3	16 56	57
δ Cygni	3.0	18 29	26
γ Cygni	2.3	18 39	40
ε Cygni	2.6	18 45	55
ζ Cygni	3.4	19 6	63
α Cygni	1.3	19 26	26
η Pegasi	3.1	20 36	63
α Andromedæ	2.2	21 59	65
δ Andromedæ	3.2	22 32	62
μ Andromedæ	3.9	23 5	45
β Andromedæ	2.4	23 11	52
		[
		1	1
		100	
			10
	1		
	I	1	1 1

Stąr.	Mag.	L. S.T.	Az.
γ Ceti δ Ceti α Ceti β Eridani δ Orionis ζ Orionis ζ Orionis ζ Orionis α Canis Minoris ζ Hydræ β Virginis η Virginis ζ Virginis ζ Virginis ζ Virginis ζ Virginis ζ Ophiuchi δ Ophiuchi δ Ophiuchi δ Aquilæ λ Aquilæ λ Aquilæ λ Aquarii γ Piscium λ Aquarii λ Aquarii γ Piscium λ Aquarii λ Aquarii λ Aquarii	Mag. 3.7 4.8 2.9 3.4 2.5 7 2.0 0.3 3.4 2.5 3.4 3.6 3.9 3.4 3.6 3.9 3.4 3.6 3.9 3.4 3.6 3.9 3.8 3.9 3.4 3.9 3.8	L.S.T. h. m. 0 55 1 12 3 55 3 55 4 10 4 21 4 23 5 45 6 59 7 2 8 33 10 42 11 4 11 7 13 58 14 23 14 45 14 49 14 58 15 51 16 54 17 37 17 49 18 36 20 19 20 30 21 55	Az. 119 126 117 142 133 128 130 132 155 145 113 112 137 155 121 127 117 129 127 115 136 121 136 139 115 134 119 141 129 144 128 132 119 153

Star.	Mag.	L. S.T.	Az.
		h. m.	0
γ Piscium	3.9	0 56	241
γ Piscium δ Ceti	4.0	4 10	234
γ Ceti	3.7	4 23	241
α Ceti	2.8	4 44	243
β Orionis	0.3	6 I	205
β Eridani	2.9	6 17	218
c Orionis	2.9	6 39	215
η Orionis	3.4	6 45	227
δ Orionis ε Orionis	2.5	7 Î	232
ε Orionis ζ Orionis	2.0	7 3 7 4	228
α Orionis	1.2	7 4 7 45	251
a Canis Minoris	0.5	9 25	247
30 Monocerotis	4.0	9 42	223
α Hydræ	2.2	10 15	205
$\zeta Hydra$	3.3	10 43	248
β Virginis	3.8	13 28	239
η Virginis	4.0	13 50	233
γ Virginis δ Virginis	3.0	14 9 14 38	231
	3.7		243
ζ Virginis	3.4	15 5	233
μ Serpentis	3.6	17 7	224
ε Ophiuchi	3.3	17 30	221
8 Ophiuchi	3·8	17 31	224 245
ε Serpentis λ Ophiuchi	-		239
β Ophiuchi	3·9 2·9	18 9	245
η Serpentis	3.4	19 41	226
λ Aquilæ	3.6	20 15	219
δ Aquilæ	3.4	21 5	241
θ Aquilæ	3.4	21 38	231
β Aquarii	3· i	22 35	216
α Aquarii	3.2	23 34	232
λ Aquarii	3.8	23 41	207
γ Aquarii	4.0	23 45	228
			l
		-	l
		-]
			- 1
			l
			-
+			
X			
			ĺ
			ı

Star.	Mag.	L. S.T.	Az.
	•	h. m.	0
η Pegasi	3.1	0 42	297
α Andromedæ	2.2	2 9	295
δ Andromedæ	3.2	2 38	298
μ Andromedæ	3.9	2 39	315
β Andromedæ	2.4	2 59	308
γ Andromedæ	2.3	3 30	325
β Trianguli	3·1	4 I	307
β Persei	2.6	4 40	321
ε Persei	3.0	5 33	319
ζ Persei	2.9	5 51	30I
η Aurigæ	3.3	6 36	323
L Aurigæ	2.9	6 51	304
β Aurigæ	2·I	7 7 7 26	334 294
β Tauri θ Aurigæ	1.8		
~ ? 1	2.7	7 43	313 302
α Geminorum 40 Lyncis	2.0	9 30	308
	3.3	11 48	325
μ Ursæ Majoris ψ Ursæ Majoris	3.5	12 18	334
12 Canum Venat.	2.9	14 36	317
γ Boötis	3.0	16 14	317
ρ Boötis	3.8	16 30	299
β Boötis	3.6	16 36	32I
δ Boötis	3.2	17 10	305
	3.6	18 23	318
η Herculis ζ Herculis	3.0	18 39	301
ε Herculis	3.9	18 59	299
π Herculis	3.4	19 2	312
α Lyræ	0.1	20 19	317
δ Cygni	3.0	20 55	334
γ Lyræ	3.3	20 56	303
α Cygni	1.3	21 52	334
γ Cygni	2.3	21 59	320
ε Cygni	2.6	22 41	305
ζ Cygni	3.4	23 12	² 97
	!		
	- 1		
	ı		
	l		
	1		ļ
]	i	
			1
]			
			1

					1			
Star.	Mag.	L.S.T.	Az.		Star.	Mag.	L.S.T.	Az.
	<u>'</u>	h. m.	0			<u>'</u>	h. m.	0
β Trianguli	3·1	0 13	5 I		θ Ceti	3.8	0.23	151
γ Andromedæ	2.3	0 35	32		γ Ceti	3.7	0 53	117
β Persei	2.6	1 31	36		δ Ceti	4.0	0 57	124
ζ Persei	2.9	1 50	57		α Ceti	2.8	I 10	115
ε Persei	3.0	2 17	38		ε Eridani	3.8	2 42	157
L Aurigæ	2.9	2 56	54		8 Eridani	3.7	2 55	158
β Tauri	1.8	3 18	64		β Eridani	2.9	3 46	139
η Aurigæ	3.3	3 31	35		δ Orionis	2.5	3 51	125
θ Aurigæ	2.7	4 9	45		η Orionis ε Orionis	3.4	3 52	131
α Geminorum β Geminorum	2·0 I·2	5 31	57 65		Y Orienia	2.0	3 58 4 6	127
I in T-main	3.3	5 37 7 24	50		6 Orionia	0.3	4 12	129
μ Ursæ Majoris	3.2	8 52	32		Crionis	2.9	4 18	141
δ Leonis	2.6	9 3	79		x Orionis	2.2	4 57	157
12 Canum Venat.	2.9	11 13	41		a Canis Minoris	0.5	5 43	111
ρ Boötis	3.8	12 28	59		30 Monocerotis	4.0	6 57	134
ε Boōtis	2.7	12 37	66		α Hydræ	2.2	8 25	150
γ Boötis	3.0	12 49	4I		β Virginis	3.8	IO 2	119
δ Boötis	3.2	13 17	53		η Virginis	4.0	10 39	125
β Boötis	3.6	13 27	36		δ Virginis	3.7	II 2	115
ζ Herculis	3.0	14 40	57		γ Virginis	3.0	11 3	127
ε Herculis	3.9	14 57	59		ζ Virginis	3.4	11 54	125
η Herculis π Herculis	3.6	15 2	40		μ Serpentis	3.6	14 18	133
TT 1"	3.4	15 26	46		β Libræ	2.7	14 21	154
1 ' T	3.2	15 39	65		λ Ophiuchi δ Ophiuchi	3·9	I4 42	119
γ Lyræ	3.3	16 54	41 55		- Onkingh:	3.3	14 45 14 53	133
β Cygni	3.5	17 23	65		β Ophiuchi	2.9	15 49	113
γ Cygni	2.3	18 45	38		η Serpentis	3.4	16 50	132
ε Cygni	2.6	18 48	53		v Ophiuchi	3.5	17 9	157
ζ Cygni	3.4	19 8	61		δ Aquilæ	3.4	17 35	117
η Pegasi	3.1	20 38	61		·λ Aquilæ	3.6	17 44	138
β Pegasi	2.5	20 56	- 66		θ Aquilæ	3.4	18 32	127
α Andromedæ	2.2	22 2	64		ε Aquarii	3.8	19 57	157
8 Andromedæ	3.2	22 34	60		β Aquarii	3.1	20 13	141
μ Andromedæ β Andromedæ	,	23 10	43		α Aquarii	3.2	20 27	126
β Andromedæ	2.4	23 14	49		γ Aquarii	4.0	20 45	129
1	l	1			γ Piscium λ Aquarii	3·8	21 27 21 48	117
					ı Ceti	3.8	23 26	156
	1		l .				20 20	100
		Ì	l		ļ			
				1				
			1	1				
					()			
		1						
J	1	1	1	Į.	1	1	i	

Star.	Mag.	L. S.T.	Az.
		h. m.	•
γ Piscium ι Ceti	3·9 3·8	0 59 1 4	243 204
θ Ceti	3.8	2 17	209
			236 203
			202
~			243
α Ceti	2.8	4 46	245
			210
			221 203
	1	l _	219
η Orionis	3.4	6 49	229
δ Orionis	2.2	7 4	235
		' -	233
		. , -	231 253
		9 27	249
30 Monocerotis	4.0	9 47	226
			210
β Virginis			24I 235
γ Virginis	3.0		233
δ Virginis	3.7	14 40	245
ζ Virginis	3.4	15 8	235
l ' ~	2.7		206 227
			224
		17 35	227
λ Ophiuchi	3.9	18 12	241
v Ophiuchi			203 247
			228
λ Aquilæ	3.6	20 20	222
δ Aquilæ	3.4	21 7	243
			203
1 1	3.4		233 219
α Aquarii	3.2		234
λ Aquarii	3.8	23 48	211
γ Aquarii	4.0	23 49	231
7.04			
0		<u> </u>	
	γ Piscium	γ Piscium 3.9 ι Ceti 3.8 θ Ceti 3.8 δ Ceti 3.8 δ Eridani 3.7 γ Ceti 3.7 α Ceti 2.8 β Orionis 2.9 α Orionis 2.9 η Orionis 2.9 η Orionis 2.5 ε Orionis 2.5 ε Orionis 2.5 ε Orionis 2.5 ε Orionis 2.5 ε Orionis 2.0 α Orionis 2.0 α Orionis 2.0 α Orionis 3.4 δ Orionis 2.0 α Orionis 2.0 α Orionis 3.4 δ Orionis 3.4 δ Orionis 3.4 δ Orionis 3.7 ζ Orionis 3.8 η Virginis 3.8 η Virginis 3.8 η Virginis 3.7 ζ Virginis 3.7 ζ Virginis 3.7 ζ Virginis 3.7 ζ Virginis 3.7 ζ Virginis 3.7 ζ Virginis 3.7 ζ Virginis 3.7 ζ Virginis 3.6 ε Ophiuchi 3.3 δ Ophiuchi 3.5 β Ophiuchi 3.5 β Ophiuchi 3.5 β Ophiuchi 3.5 β Ophiuchi 3.6 δ Aquilæ 3.5 β Aquilæ 3.6 δ Aquilæ 3.6 δ Aquilæ 3.6 δ Aquilæ 3.6 δ Aquilæ 3.6 δ Aquilæ 3.7 α Aquarii 3.8 θ Aquarii 3.8 θ Aquarii 3.8 θ Aquarii 3.8 θ Aquarii 3.9 λ Aquarii 3.8	γ Piscium 3.9 0.59 ι Ceti 3.8 1.4 θ Ceti 3.8 2.17 δ Ceti 4.0 4.13 ε Eridani 3.8 4.16 δ Eridani 3.7 4.23 γ Ceti 2.8 4.46 β Orionis 2.9 6.22 κ Orionis 2.9 6.22 κ Orionis 2.9 6.44 η Orionis 2.9 6.44 η Orionis 2.9 6.44 η Orionis 2.9 6.44 η Orionis 2.9 6.44 η Orionis 2.9 7.4 ε Orionis 2.0 7.8 α Orionis 1.2 7.47 α Canis Minoris 0.5 9.27 30 Monocerotis 4.0 9.47 α Hydræ 2.2 10.23 η Virginis

LATITUDE 17º NORTH.

NE. QUADRANT Star. Mag. L.S.T. Az. h. m. β Trianguli 0 16 3·1 49 Y Andromedæ ... 2.3 0 41 30 β Persei ... 2.6 I 37 34 Υ Persei ... 2.9 I 53 56 ε Persei ... 36 3.0 2 22 ι Aurigæ ... 2.9 2 59 52 β Tauri 62 1.8 3 20 η Auriga ... 3 38 3.3 32 θ Aurigæ ... 2.7 4 13 43 α Geminorum ... 55 63 2.0 5 34 β Geminorum ... I • 2 5 38 40 Lyncis 7 28 8 59 3.3 48 μ Ursæ Majoris 30

3.2

2.6

2.9

3.8

2.7

3.0

3.2

2.3

3.6

3.0

3.9

3.6

3.4

3.2

0· I

3.3

3.2

2.3

2.6

3.4

3.1

2.5

2.2

3.2

3.9

9 4

11 18

12 31

12 39

12 54

13 20

13 29

13 33

14 43

15 30

15 41

16 59

17 25

18 50

18 51

19 10

20 40

20 58

22 37

23 15

23 18

22

15 0

15 7

17 2 77

39

57

64

39

51

65

34

55

57

38

44

64

39

53

64

35

51

59

60

64

62

58

4I

47

δ Leonis 12 Canum Venat.

ρ Boötis ...

ε Boötis ...

γ Boötis ...

δ Boötis ...

β Boötis ...

ζ Herculis

ε Herculis

η Herculis

π Herculis

μ Herculis

a Lyræ

γ Lyræ

β Cygni

γ Cygni

ε Cygni

ζ Cygni

η Pegasi

β Pegasi ...

α Andromedæ ...

δ Andromedæ ...

μ Andromedæ ...

β Andromedæ ...

α Coronæ Boreal.

SE. QUADRANT

Star.	Mag.	L.S.T.	Az.
θ Ceti γ Ceti δ Ceti α Ceti ε Eridani ε Eridani η Orionis ο Orionis ο Orionis ο Orionis α Canis Minoris 30 Monocerotis α Hydræ β Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Virginis α Hydræ β Aquarii γ Aquarii	3.8 3.0 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9	h. m. 0 16 0 51 1 8 2 33 2 46 3 42 3 47 3 49 3 55 4 13 4 48 5 42 6 53 8 10 10 36 11 51 12 35 14 13 14 15 14 40 17 33 17 39 18 29 19 48 20 42 21 25 21 41 23 17	147 115 122 156 113 152 153 136 128 123 125 127 146 138 152 109 131 146 117 123 124 122 158 149 130 117 131 134 155 129 152 115 135 124 155 127 145 150

Star.	Mag.	L.S.T.	Az.
		h. m.	0
η Pegasi	3.1	0 38	300
β Pegasi	2.5	I 2	296
α Andromedæ	2.2	2 4	298
μ Andromedæ	3.9	2 29	319
δ Andromedæ	3.2	2 33	302
β Andromedæ	2.4	2 52	313
γ Andromedæ	2.3	3 17	330
β Trianguli	3.1	3 54	311
β Persei	2.6	4 29	326
ε Persei	3.0	5 22	324
ζ Persei	2.9	5 45	304
η Aurigæ	3.3	6 24	328
ι Aurigæ β Tauri	2.9	6 45	308
β Tauri θ Aurigæ	1.8	7 22	298
α Geminorum	2.7	7 35	317
β Geminorum	1.5	9 24	305
40 Lyncis	3.3	9 42 11 4	297 312
μ Ursæ Majoris	3.2	11 35	330
δ Leonis	2.6	13 16	283
12 Canum Venat.	2.9	14 26	321
γ Boötis	3.0	16 4	321
β Boötis	3.6	16 25	326
ρ Boötis	3.8	16 25	303
ε Boötis	2.7	16 43	296
δ Boötis	3.2	17 4	309
α Coronæ Boreal.	2.3	17 33	295
η Herculis	3.6	18 13	322
ζ Herculis	3.0	18 33	305
π Herculis	3.4	18 54	316
ε Herculis	3.9	18 54	303
μ Herculis	3.2	19 45	296
α Lyræ	0.1	20 9	321
γ Lyræ	3.3	20 50	307
β Cygni	3.2	21 29 21 48	296
γ Cygni ε Cygni	2.3	22 35	325 309
ζ Cygni	3.4	23 8	301
3 0) Sm	24	2, 0	ا دور
i			
ļ			
			1
7.0			
		l	. [
			l

NE. QUADRANT

Star.	Mag.	L. S.T.	Az.
·		h. m.	0
β Trianguli	3·1	0 20	47
γ Andromedæ β Persei	2.3	0 49	27
β Persei	2.6	I 44	31
ζ Persei ε Persei	3·0	1 57 2 29	54
L Aurigæ	2.9	2 29	33 50
β Tauri	1.8	3 23	60
η Aurigæ	3.3	3 45	29
0 Aurigæ	2.7	4 18	40
α Geminorum	2.0	5 38	53
β Geminorum 40 Lyncis	1.2	5 41	61 46
δ Leonis	3·3 2·6	7 32 9 5	76
μ Ursæ Majoris	3.2	9 7	27
12 Canum Venat.	2.9	11 23	36
ρ Boötis	3.8	12 34	55
ε Boötis	2.7	12 41	63
γ Boötis δ Boötis	3.2	13 0	36
α Coronæ Boreal.	2.3	13 24 13 31	49 63
β Boötis	3.6	13 40	31
	3.0	14 46	53
ε Herculis	3.9	15 3	55
η Herculis π Herculis	3.6	15 13	35
μ Herculis	3.4	15 35 15 44	41 62
α Lyræ	3·2	15 44 17 5	36
γ Lyræ	3.3	17 6	51
β Cygni	3.2	17 28	62
ε Cygni	2.6	18 55	49
γ Cygni ζ Cygni	2.3	18 56	33
η Pegasi	3·4	19 13	57 58
β Pegasi	2.5	2I I	62
α Andromedæ	2.2	22 6	60
δ Andromedæ	3.2	22 40	56
μ Andromedæ β Andromedæ	3·9 2·4	23 20	38 45
p Andromeda	2.4	23 22	45
	ĺ		

Ŧ		1	
Star.	Mag.	L. S.T.	Az.
	<u> </u>	l h. m.	0
θ Ceti	3.8	0 10	144
ζ Ceti	3.9	0 52	152
δ Ceti	4.0	0 52	120
α Ceti	2.8	1 7	111
ε Eridani	3.8	2 26	148
δ Eridani	3.7	2 39	149
β Eridani	2.9	3 38	133
η Orionis δ Orionis	3.4	3 44	126
0	2.5	3 46 3 52	121
ε Orionis β Orionis	0.3	3 52 4 0	123 143
ζ Orionis	2.0	4 0	125
ι Orionis	2.9	4 8	135
κ Orionis	2.2	4 41	148
a Canis Minoris	0.5	5 40	107
30 Monocerotis	4.0	6 50	129
α Hydræ	2.2	8 13	143
β Virginis	3.8	9 58	115
η Virginis	4.0	10 33	120
γ Virginis	3.0	10 57	122
ζ Virginis	3.4	11 48	I 20
α Virginis	I.5	12 26	152
β Libræ	2.7	14 6	.145
μ Serpentis δ Ophiuchi	3.6	14 11	128 128
2.0.1	3·0 3·9	14 37 14 38	114
ε Ophiuchi	3.3	14 45	131
ζ Ophiuchi	2.7	15 35	150
η Serpentis	3.4	16 42	127
v Ophiuchi	3.5	16 53	148
λ Aquilæ	3.6	17 35	133
θ Aquilæ	3.4	18 26	122
ε Aquarii	3.8	19 41	148
β Aquarii	3.1	20 4	135
α Aquarii	3.5	20 2 I	121
γ Aquarii	4.0	20 39	124
λ Aquarii ι Ceti	3.8	21 35	142
t Ceti	3.8	23 9	146
(
*	5		
			•
			J
			[
			1

Star.	Mag.	L. S.T.	Az.
Star.	mug.	D. S. I.	AZ.
	<u> </u>	h. m.	0
λ Aquarii	3⋅8	O I	218
ι Ceti	3⋅8	I 21	214
θ Ceti	3.8	2 30	216
ζ Ceti	3.9	2 42	208
δ Ceti	4.0	4 18	240
ε Eridani	3.8	4 32	212
δ Eridani	3.7	4 39	211
a Ceti	2.8	4 49	249
β Orionis	0.3	6 22	217
β Eridani	2.9	6 30	227
х Orionis	2.2	6 47	212
l Orionis	2.9	6 54	225
η Orionis	3.4	6 56	234
δ Orionis	2.5	7 10	239
ε Orionis	1.7	7 12	237
ζ Orionis	2.0	7 14 9 30	235
α Canis Minoris			253
30 Monocerotis	4.0	9 54	231
α Hydræ	2.2	10 35	217
β Virginis	3.8	13 34	245
η Virginis	4.0	13 59	240
α Virginis	1.5	14 16	208
γ Virginis ζ Virginis	3.0	14 19	238
ζ Virginis	3.4	15 14	240
β Libræ	2.7	16 20	215
μ Serpentis	3.6	17 19	232
ζ Ophiuchi	2.7	17 31	210
δ Ophiuchi	3.0	17 43	232
ε Ophiuchi	3.3	17 43	229 246
λ Ophiuchi	3.9	18 16	
v Ophiuchi	3.2	18 57	212
η Serpentis	3.4	19 51	233
λ Aquilæ	3.6	20 29	227 212
ε Aquarii	3.8	21 45 21 48	238
θ Aquilæ	3·4 3·1	21 48 22 50	225
β Aquarii	3.2	23 43	239
α Aquarii γ Aquarii		23 55	236
Y Aquarii	4.0	ן ככ כ״	~50
			ł
		T	
			1
		<u> </u>	

			,
Star.	Mag.	L. S.T.	Az.
	-	h. m.	0
η Pegasi	3.1	0 35	302
β Pegasi	2.5	0 59	298
α Andromedæ	2.2	2 2	300
μ Andromedæ	3.9	2 24	322
δ Andromedæ	3.2	2 30	304
β Andromedæ	2.4	2 48	315
γ Andromedæ	2.3	3 9	333
β Trianguli	3.1	3 50	313
β Persei	2.6	4 22	329
ε Persei	3.0	5 15	327
ζ Persei	2.9	5 41	306
η Aurigæ	3.3	6 17	331
L Aurigæ	2.9	6 41	310
β Tauri	1.8	7 19	300
θ Aurigæ	2.7	7 30	320
α Geminorum	2.0	9 20	307
β Geminorum	I·2	9 39	299
40 Lyncis	3.3		314
μ Ursæ Majoris δ Leonis	3·2 2·6	11 27 13 15	333 284
12 Canum Venat.	2.9	14 21	324
	3.0	15 58	324
γ Boötis β Boötis	3.6	16 18	329
ρ Boötis	3.8	16 22	305
ε Boötis	2.7	16 41	297
δ Boötis	3.5	17 0	311
α Coronæ Boreal.	2.3	17 31	297
η Herculis	3∙6	18 7	325
ζ Herculis	3.0	18 30	307
π Herculis	3.4	18 49	319
ε Herculis	3.9	18 51	305
μ Herculis	3.5	19 42	298
α Lyræ	0.1	20 3	324
γ Lyræ	3.3	20 46	309
β Cygni	3.2	21 26	298
γ Cygni	2.3	21 42	327
ε Cygni	2.6	22 31	311
ζ Cygni	3.4	23 5	303
		İ	1
1			
	i		
İ			
			- 1
·			

L. S.T. Star. Mag. Az. h. m. β Trianguli 45 23 3. I 0 23 γ Andromedæ ... 2.3 0 57 Persei ... 2.6 28 1 51-Persei ... 2.9 0 52 ε Persei ... 3.0 2 35 30 6 48 L Aurigæ ... 2.9 β Tauri 1.8 3 25 59 Aurigæ ... 3.3 52 26 3 Aurigæ ... 38 2.7 23 65 ε Geminorum ... 3.2 38 α Geminorum ... 2.0 5 41 51 β Geminorum ... 5 43 I:2 59 40 Lyncis ... 35 *39* 44 68 3.3 ε Leonis ... 3.1 2.6 9 6 74 δ Leonis ... u Ursa Majoris 3.2 9 15 23 12 Canum Venat. 2.9 I.I 29 34 ρ Boötis ... 12 37 3.8 54 61 ε Boötis ... 12 43 2.7 γ Boötis ... δ Boötis ... Boötis 3.0 13 34 13 28 47 62 3.2 α Coronæ Boreal. 2.3 13 33 Boötis ... 28 3.6 13 48 Herculis 3.0 - 51 14 49 ε Herculis 6 3·9 3·2 53 66 15 δ Herculis *15 11* η Herculis 3.6 15 19 33 π Herculis 15 40 3.4 39 μ Herculis 15 46 3.2 60

17

19

21

22 8

17 11

17.30 18 59

19 3 19 16

20 2

20 46

22 43

23 26

23 26

3.3

ÓΙ

3.2

2.6

2.3

3.4 4.0

3.1

2.5

2.2

3.2

2.4

3.9

49

34[°] 60

47

30 56

66

56

60

58

54

43 36

γ Lyræ

α Lyræ

β Cygni

Cygni

Cygni

Cygni

β Pegasi

Pegasi ...

Pegasi ...

α Andromedæ ...

δ Andromedæ ...

μ Andromedæ ...

Andromedæ ...

··			
Star.	Mag.	L.S.T.	Az.
		h. m.	0
θ Ceti	3.8	0 5	141
ζ Ceti	3.9	0 44	148
δ Ceti	4.0	0 49	118
α Ceti	2.8	1 5	109
ε Eridani	3.8	2 20	144
δ Eridani	3.7	2 32	145
β Eridani	2.9	3 34	131
η Orionis	3.4	3 4 I	124
δ Orionis	2.5	3 44	119
ε Orionis	1.7	3 50	120
β Orionis ζ Orionis	0.3	3 55	140
	2.0	3 57	I 22
ι Orionis	2.9	4 4	132
κ Orionis	2.2	4 35	I44
α Canis Minoris	0.5	5 39	106
30 Monocerotis α Hydræ	4.0	6 46	126
	2.2	8 8	140
β Virginis	3.8	9 56	113
η Virginis γ Virginis	4.0	10 31	118
γ Virginis ζ Virginis	3.0	10 55	120
α Virginis	3.4 1.2	11 46 12 18	118
β Libræ			148
μ Serpentis	2·7 3·6	14 I 14 8	142 125
δ Ophiuchi	3.0	14 34	126
ε Ophiuchi	3.3	14 42	129
ζ Ophiuchi	2.7	15 28	147
η Serpentis	3.4	16 39	125
v Opĥiuchi	3.5	16 46	144
λ Aquilæ	3.6	17 31	130
θ Aquilæ	3.4	18 24	120
α ² Capricorni	<i>3</i> ·8	19 28	157
ε Aquarii	3⋅8	19 35	145
β Aquarii	3.1	20 0	133
α Aquarii	3.5	20 19	119
γ Aquarii	4.0	20 36	122
λ Aquarii ι Ceti	3.8	21 30	139
t Ceti	3.8	23 3	143
,			
-			
		<u> </u>	l

Star.	Mag.	L. S.T.	Az.	
λ Aquarii ι Ceti θ Ceti δ Ceti δ Eridani δ Eridani β Orionis ι Orionis ι Orionis ι Orionis δ Orionis γ Orionis ζ Orionis ζ Orionis ζ Orionis ζ Orionis ζ Orionis ζ Orionis ζ Virginis γ Virginis γ Virginis γ Virginis γ Virginis ζ Virginis ζ Virginis γ Virginis γ Virginis γ Virginis γ Virginis γ Ophiuchi	3.8 3.8 3.9 4.0 3.8 3.7 2.8 3.9 2.2 2.9 3.4 2.5 1.7 2.0 3.8 4.0 3.8 4.0 3.8 4.0 3.8 4.0 3.6 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	h. m. 0 6 1 27 2 35 2 50 4 21 4 38 4 46 4 51 6 27 6 34 6 53 6 58 6 59 7 12 7 14 7 17 9 31 9 58 10 40 13 36 14 1 14 21 14 24 15 16 16 26 17 22 17 38	221 217 219 212 242 216 215 251 220 229 216 227 236 241 240 238 254 234 220 247 242 240 212 242 218 235 213	
δ Ophiuchi ε Ophiuchi ν Ophiuchi η Serpentis λ Aquilæ α **Capricorni** θ Aquilæ ε Aquarii β Aquarii α Aquarii γ Aquarii	3·3 3·5 3·4 3·6 3·8 3·1 3·2 4·0	17 46 17 46 19 4 19 54 20 33 21 0 21 50 21 51 22 54 23 45 23 58	234 231 216 235 230 203 240 215 227 241 238	

Star.	Mag.	L. S.T.	Az.
		h. m.	•
ι Pegasi	4.0	0 4	294
η Pegasi	3.1	0 32	304
β Pegasi	2.5	0 57	300
a Andromedæ	2.2	2 0	302
μ Andromedæ	3.9	2 18	324
δ Andromedæ	3.2	2 27	306
β Andromedæ	2.4	2 44	317
γ Andromedæ	2.3	3 1	337
β Trianguli	3.1	3 47	315
β Persei	2.6	4 15	332
ε Persei	3.0	5 9	330
ζ Persei	2.9	5 38	308
η Aurigæ	3.3	6 ro	334
. Aurigæ	2.9	6 38	312
β Tauri	1.8	7 17	30I
θ Aurigæ	2.7	7 25	322
ε Geminorum	3.2	8 40	295
α Geminorum	2.0	9 17	309
β Geminorum	1.5	9 37	301
40 Lyncis	3.3	10 57	316
μ. Ursæ Majoris	3.2	11 19	337
ε Leonis	3.1	11 43	292
δ Leonis ·	2.6	13 14	286
12 Canum Venat.	2.9	14 15	326
γ Boötis	3.0	15 52	326
β Boötis	3.6	16 10	332
ρ Boötis ε Boötis	3.8		306
ε Boötis	2·7 3·5	16 39 16 56	299
α Coronæ Boreal.	2.3	17 29	313
η Herculis	3.6	18 1	327
ζ Herculis	3.0	18 27	309
π Herculis	3.4	18 44	321
ε Herculis	3.9	18 48	307
δ Herculis	3.2	19 13	294
μ Herculis	3.5	19 40	300
α Lyræ	0.1	19 57	326
T 1	3.3	20 43	311
γ Lyræ β Cygni	3.2	21 24	300
γ Cygni	2.3	21 35	330
ε Cygni[2.6	22 27	313
ζ Cygni	3.4	23 2	304
		}	
P			
,			İ
	}		•
			7 - 5

Star.	Mag.	L. S.T.	Az.
Star. β Trianguli β Persei	3·1 6 2·9 3·9 8 2·7 2·9 8 2·9 3·9 3·6 3·5 3·3 3·1 2·6 3·4 3·7 1 2·5 2·2 3·5 3·5 3·6 3·5 3·1 2·6 3·4 3·7 1 2·5 2·2 3·5	h. m. 0 28 1 59 2 43 3 10 3 28 4 49 5 45 5 46 7 42 9 8 11 36 12 46 13 12 13 35 14 52 15 46 15 49 17 13 17 17 17 33 19 11 19 19 20 47 20 49 21 5 22 11 22 46 23 31 23 32	43 25 50 27 46 57 35 64 48 57 42 66 72 31 52 59 31 45 60 24 49 51 64 30 36 58 47 31 58 45 66 57 31 58 47 31 58 58 58 58 58 58 58 58 58 58 58 58 58

Star.	Mag.	L. S.T.	Az.
θ Ceti ζ Ceti δ Ceti α Ceti ε Eridani δ Eridani γ Eridani	3·8 3·9 4·0 2·8 3·8 3·7 3·2	h. m. 0 0 0 38 0 47 1 4 2 14 2 26 3 8	137 144 116 107 141 142 157
	2·9 3·4 2·5 1·7 0·3 2·0 2·9 2·2	3 31 3 38 3 42 3 47 3 50 3 54 4 0 4 30	128 121 116 118 137 120 130
α Canis Minoris 30 Monocerotis α Hydræ β Virginis γ Virginis ζ Virginis α Virginis α Virginis	0.5 4.0 2.2 3.8 4.0 3.0 3.4	5 38 6 44 8 3 9 54 10 29 10 53 11 44 12 12	104 124 137 111 116 118 116
β Libræ μ Serpentis δ Ophiuchi ς Ophiuchi γ Ophiuchi η Serpentis ν Ophiuchi λ Aquilæ	2·7 3·6 3·0 3·3 2·7 3·4 3·5	13 56 14 5 14 31 14 38 15 22 16 36 16 41 17 28	139 123 124 126 143 122 141 128
θ Aquilæ α² Capricorni ε Aquarii β Aquarii α Aquarii γ Aquarii λ Aquarii	3.4 3.8 3.8 3.1 3.2 4.0 3.8	18 22 19 19 19 29 19 56 20 16 20 34 21 25	118 152 142 130 117 120 136
. Ceti	3.8	22 58	140
,		p.	

LATITUDE 14º NORTH.

SW. QUADRANT

4.0 3.8 3.8 3.9 4.0 3.2 3.8 3.7 0.3 2.9 2.2 3.4 2.9 2.5 1.7 2.0 0.5	h. m. 0 0 0 11 1 32 2 40 2 56 4 23 4 40 4 44 4 52 6 32 6 37 6 59 7 2 7 14 7 17	240 224 220 223 216 244 203 219 218 223 232 219 239 230 244
3.8 3.8 3.9 4.0 3.8 3.7 0.3 2.9 2.2 3.4 2.9 2.5 1.7	0 0 0 11 1 32 2 40 2 56 4 23 4 40 4 44 4 52 6 37 6 59 7 2 7 14	240 224 220 223 216 244 203 219 218 223 232 219 239 230
3.8 3.8 3.9 4.0 3.8 3.7 0.3 2.9 2.2 3.4 2.9 2.5 1.7	0 II I 32 2 40 2 56 4 23 4 40 4 44 4 52 6 32 6 37 6 59 7 2 7 14	224 220 223 216 244 203 219 218 223 232 219 239 230
3.8 3.8 3.9 4.0 3.8 3.7 0.3 2.9 2.2 3.4 2.9 2.5 1.7	1 32 2 40 2 56 4 23 4 40 4 44 4 52 6 32 6 37 6 59 7 2 7 14	224 220 223 216 244 203 219 218 223 232 219 239 230
3.8 3.9 4.0 3.8 3.7 0.3 2.9 2.2 3.4 2.9 2.5 1.7	2 40 2 56 4 23 4 40 4 44 4 52 6 32 6 37 6 59 7 2 7 14	220 223 216 244 203 219 218 223 232 219 239 230
3.8 3.9 4.0 3.2 3.8 3.7 0.3 2.9 2.2 3.4 2.9 2.5 1.7	2 40 2 56 4 23 4 40 4 44 4 52 6 32 6 37 6 59 7 2 7 14	223 216 244 203 219 218 223 232 219 239 230
3.9 4.0 3.2 3.8 3.7 0.3 2.9 2.2 3.4 2.9 2.5 1.7	2 56 4 23 4 40 4 44 4 52 6 32 6 37 6 59 7 2 7 14	216 244 203 219 218 223 232 219 239 239
4.0 3.2 3.8 3.7 0.3 2.9 2.2 3.4 2.9 2.5 1.7	4 23 4 40 4 44 4 52 6 32 6 37 6 59 7 2 7 2 7 14	203 219 218 223 232 219 239 230
3.2 3.8 3.7 0.3 2.9 2.2 3.4 2.9 2.5 1.7	4 40 4 44 4 52 6 32 6 37 6 59 7 2 7 2 7 14	203 219 218 223 232 219 239 230
3·8 3·7 0·3 2·9 2·2 3·4 2·9 2·5 1·7 2·0	4 44 4 52 6 32 6 37 6 59 7 2 7 2 7 14	218 223 232 219 239 230
3·7 0·3 2·9 2·2 3·4 2·9 2·5 1·7 2·0	4 5 ² 6 3 ² 6 37 6 59 7 ² 7 ² 7 ¹	218 223 232 219 239 230
0·3 2·9 2·2 3·4 2·9 2·5 1·7 2·0	6 32 6 37 6 59 7 2 7 2 7 14	232 219 239 230
2·9 2·2 3·4 2·9 2·5 1·7 2·0	6 37 6 59 7 2 7 2 7 14	232 219 239 230
2·2 3·4 2·9 2·5 1·7 2·0	6 59 7 2 7 2 7 14	219 239 230
2·9 2·5 1·7 2·0	7 2 7 2 7 14	239 230
2·9 2·5 1·7 2·0	7 2 7 14	230
2·5 1·7 2·0	7 14	-
I·7 2·0		
2.0	, ,	242
0.5	7 20	240
	9 32	256
4.0	10 0	236
2.2	10 45	223
3.8	13 38	249
4.0	14 3	244
3.0	14 23	242
I·2	14 30	216
3.4	15 18	244
2.7	16 30	221
3.6	17 25	237
2.7	17 44	217
3.0	17 49	236
3.3	17 50	234
3.2	19 9	219
3.4	19 58	238
	-	232
	21 9	208
		242
		218
		230
3.5	23 48	243
		-
7 0		
	9.5	
		1
		ſ
		j
	.	
	3.4 2.7 3.6 2.7 3.3 3.5 3.4 3.8 3.4 3.8 3.8	3.4 15 18 2.7 16 30 3.6 17 25 2.7 17 44 3.0 17 49 3.3 17 50 3.5 19 9 3.4 19 58 3.6 20 36 3.8 21 9 3.4 21 52 3.8 21 57 3.1 22 58

Star.	Mag.	L.S.T.	Az.
Pegasi γ Pegasi γ Pegasi γ Pegasi γ Pegasi γ Pegasi γ Andromedæ β Andromedæ β Andromedæ β Andromedæ β Persei γ Persei β Aurigæ β Aurigæ β Geminorum β Geminorum β Geminorum γ Boötis γ Boötis β Boötis β Boötis β Boötis β Boötis γ Boötis β Herculis γ Herculis γ Herculis γ Herculis γ Herculis γ Herculis γ Cygni	4.0 3.7 2.5 2.3 3.5 4.3 2.0 2.3 3.4 3.5 3.2 2.3 3.4 3.5 3.2 2.3 3.4 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5 3.5	h. m. 0 29 0 45 0 55 1 57 2 12 2 24 2 39 3 42 4 7 5 35 6 34 7 19 8 9 34 10 16 16 36 16 52 17 54 18 38 18 45 19 37 19 37 19 39 21 27 22 23 22 59	296 306 294 301 304 327 308 319 317 335 331 325 296 312 303 318 294 288 329 336 300 315 300 311 300 315 300 311 300 300

Star.	Mag.	L. S.T.	Az.
	i	h. m.	0
α Arietis	2.2	0 4	66
β Trianguli	3.1	0 33	40
17 Tauri	3.8	I 42	65
η Tauri	3.0	I 45	65
ζ Persei	2.9	2 7	47
L Aurigæ	2.9	3 14	44
β Tauri	1.8	3 30	55
θ Aurigæ	2.7	4 35	33
ε Geminorum	3.5	4 42	62
α Geminorum	2.0	5 48	46
β Geminorum ε Leonis	1.2	5 49	55
40 Lyncis	3.3	7 43	64
δ Leonis	0.0	7 45	39 70
12 Canum Venat		11 43	28
ρ Boötis	3.8	12 43	49
ε Boötis	2.7	12 49	57
γ Boötis		13 19	28
δ Boötis		13 36	43
α Coronæ Boreal	2.3	13 38	58
ζ Herculis	1	14 56	47
ε Herculis		15 13	48
δ Herculis		15 15	62
η Herculis	_	15 33	27
μ Herculis	1	15 51	56
π Herculis	1 .	15 52	33
γ Lyræ	3.3	17 17	45
α Lyræ	0.1	17 24	28
β Cygni		17 35	56
ε Cygni ζ Cygni	2.6	19 7	43
D:	3.4	19 22	52 62
μ Pegasi	3.7	20 48	64
η Pegasi	3.1	20 52	52
β Pegasi	2.5	21 8	57
α Andromedæ	2.2	22 14	55
δ Andromedæ	3.5	22 49	50
β Andromedæ	2.4	23 36	38
μ Andromedæ	. 3.9	23 38	30
-			1
12	ł	1	
		1	1 .

			
Star.	Mag.	L. S.T.	Az.
		h. m.	0
ζ Ceti δ Ceti ε Eridani δ Eridani γ Eridani	3·9 4·0 2·8 3·8 3·7 3·2	0 33 0 45 1 3 2 10 2 21 3 0	141 114 106 138 139 153
β Eridani 53 Eridani	2·9 4·0	3 28 3 45	126 156
η Orionis δ Orionis β Orionis	3·4 2·5	3 36 3 40	119
ε Orionis ζ Orionis	0·3 1·7 2·0 2·9	3 45 3 45 3 52	134 116 118 128
χ Orionis α Canis Minoris	2·2 0·5	3 57 4 25 5 37	138 102
α Hydræ β Virginis	4·0 2·2 3·8	6 41 7 58 9 53	122 134 109
δ Crateris η Virginis Υ Virginis	3·8 4·0 3·0	10 24 10 27 10 51	155 <i>114</i> 116
ζ Virginis α Virginis β Libræ	3·4 1·2 2·7	11 42 12 6 13 51	114 141 136
μ Serpentis δ Ophiuchi ε Ophiuchi	3·6 3·0 3·3	14 3 14 28 14 35	121 121 124
ζ Ophiuchi η Serpentis	2·7 3·4	15 17 16 34	140 120
λ Aquilæ θ Aquilæ ·	3·5 3·6	17 25 18 20	138 125 116
α ² Capricorni ε Aquarii β Capricorni	3·8 3·8 3·3	19 12 19 24 <i>19 32</i>	149 139 <i>159</i>
β Aquarii α Aquarii γ Aquarii	3·1 4·0	19 53 20 14 20 31	127 115 118
λ Aquarii ι Ceti θ Ceti	3·8 3·8 3·8	21 21 22 54 23 56	133 137 135
4		1	:

Star.	Mag.	L. S.T.	Az.		Star.
γ Aquarii λ Aquarii ι Ceti θ Ceti	4·0 3·8 3·8	h. m. 0 3 0 15 1 36 2 44	242 227 223 225	i.	ι Pegasi η Pegasi μ Pegasi β Pegasi
\$\text{Ceti} \\ \text{\$\coloredge Ceti} \\ \text{\$\coloredge Ceti} \\ \text{\$\coloredge Eridani} \\ \text{\$\coloredge Eridani} \\ \text{\$\coloredge Eridani} \\ \text{\$\coloredge Crionis} \\ \$\coloredge Crionis	2·9 2·5 1·7 2·0 0·5	3 2 4 25 4 48 4 48 4 57 5 23 6 36 6 40 7 3 7 16 7 19 7 22 9 33	219 246 207 222 221 204 226 234 222 241 232 246 244 242		Andromedæ μ Andromedæ δ Andromedæ β Andromedæ β Trianguli α Arietis ζ Persei τ Tauri τ Aurigæ β Tauri θ Aurigæ ε Geminorum α Geminorum
30 Monocerotis α Hydræ δ Crateris η Virginis γ Virginis α Virginis ζ Virginis ζ Virginis β Libræ μ Serpentis ζ Ophiuchi δ Ophiuchi ν Ophiuchi ν Ophiuchi ν Serpentis γ Serpentis	3.4 2.7 3.6 2.7 3.0 3.3 3.5	10 3 10 49 12 6 13 39 14 5 14 25 14 36 15 20 16 35 17 27 17 49 17 52 17 53 19 14 20 0	238 226 205 251 246 244 219 246 224 239 220 239 236 222 240		40 Lyncis ε Leonis δ Leonis γ Boötis ρ Boötis δ Boötis α Coronæ Bore η Herculis ζ Herculis ε Herculis ε Herculis ε Herculis β Herculis μ Herculis
λ Aquilæ β Capricorni α² Capricorni θ Aquilæ ε Aquarii β Aquarii α Aquarii	3.6 3.3 3.8 3.4 3.8	20 39 21 0 21 16 21 54 22 2 23 1 23 50	235 201 211 244 221 233 245		α Lyræ γ Lyræ β Cygni ε Cygni ζ Cygni
*					

			
Star.	Mag.	L. S.T.	Az.
		h. m.	0
ι Pegasi	4.0	0 0	298
η Pegasi	3.1	0 26	308
μ Pegasi	3.7	0.44	296
β Pegasi	2.5	0 52	303
α Andromedæ	2.2	I 54	305
μ Andromedæ	3.9	2 6	330
δ Andromedæ	3.2	2 21	310
β Andromedæ	2.4	2 34	322
β Trianguli	3.1	3 37	320
a Arietis	2.2	4 2	294
ζ Persei	2.9	5 31	313
17 Tauri	3.8	5 38	295
η Tauri	3.0	5 41	295
i Aurigæ	2.9	6 30	316
β Tauri	1.8	7 12	305
θ Aurigæ	2.7	7 13	327
ε Geminorum	3.5	8 36	298
α Geminorum	2.0	9 10	314
β Geminorum	I·2	9 31	305
40 Lyncis	3.3	10 47	321
ε Leonis	3·I	11 39	296
8 Leonis	2.6	13 11	290
12 Canum Venat.	2.9	14 I	332
γ Boötis	3.0	15 39	332
ρ Boötis	3.8	16 13 16 33	311
ε Boötis δ Boötis	2.7	55	303
~ ~ 1	3.5		317
** 1'	2·3 3·6	17 24	302
η Herculis ζ Herculis	3.0	17 47 18 20	333
π Herculis	3.4	18 32	327
ε Herculis	3.9	18 41	312
8 Herculis	3.2	19 9	298
μ Herculis	3.2	19 35	304
α Lyræ	0·I	19 44	332
γ Lyræ	3.3	20 35	515
β Cygni	3.2	21 19	304
	2.6	22 19	317
ε Cygni ζ Cygni	3.4	22 56	308
, , ,	٠ .		
		ĺ	ĺ
		-	.
			ì
			J
			3 -
	!		

SE. QUADRANT

1			
Star.	Mag.	L. S.T.	Az.
Star. α Arietis β Trianguli η Tauri ζ Persei β Tauri μ Geminorum θ Aurigæ ε Geminorum δ Geminorum β Geminorum β Geminorum	2·2 3·1 3·8 3·0 2·9 2·9 1·8 3·2 2·7 3·2 3·5 2·0 1·2	h. m. o 6 o 38 I 44 I 47 2 10 3 19 3 33 4 20 4 42 4 45 5 17 5 52 5 52	64 38 63 63 45 42 53 65 30 60 66 44 54
E Leonis 40 Lyncis δ Leonis η Boōtis 12 Canum Venat. ρ Boötis γ Boötis γ Boötis δ Boötis δ Boötis δ Herculis ε Herculis δ Herculis	3·I 3·3 2·6 2·8 2·9 3·8 2·7 3·0 3·5 2·3 3·9 3·2	7 45 7 50 9 11 11 50 11 52 12 46 12 51 13 27 13 40 13 40 15 0 15 16 15 17	37 69 73 24 47 55 25 40 56 45 46 61
η Herculis μ Herculis π Herculis γ Lyræ α Lyræ β Cygni ξ Cygni ι Pegasi μ Pegasi η Pegasi η Pegasi	3.6 3.5 3.4 3.3 0.1 3.2 2.6 3.4 4.0 3.7 3.1	15 42 15 54 15 58 17 21 17 32 17 38 19 11 19 25 20 8 20 50 20 55	23 54 30 43 25 54 40 49 61 62 50
β Pegasi α Andromedæ δ Andromedæ β Andromedæ μ Andromedæ		21 10 22 17 22 52 23 41 23 46	55 53 48 36 27

Star.	Mag.	L. S.T.	Az.
		h. m.	0
ζ Ceti `	3.9	0 28	138
α Ceti	2.8	1 2	105
ε Eridani	3.8	26	135
δ Eridani	3.7	2 17	136
γ Eridani	3.5	2 52	149
β Eridani	2.9	3 25	124
53 Eridani	4.0	3 37	152
η Orionis	3.4	3 34	117
β Orionis	0.3	3 42	131
ε Orionis	1.7	3 43	114
ζ Orionis	2.0	3 50	116
ι Orionis	2.9	3 54	125
κ Orionis	2.2	4 21	135
a Canis Minoris	0.5	5 37	100
30 Monocerotis	4.0	6 39	120
α Hydræ	2·2 3·3	7 55 10 1	131
$ \mathbf{v} \; Hydrx \; \dots \; \dots \\ \mathbf{\delta} \; \text{Crateris} \; \dots $	3.8	10 16	158
	3.0	10 10	150 114
6 0 .	3·1	10 40	158
α Virginis	I·2	I2 2	138
β Libræ	2.7	13 47	134
a Libras	2.9	13 58	156
μ Serpentis	3.6	14 0	119
8 Ophiuchi	3.0	14 26	119
ε Ophiuchi	3.3	14 32	122
ζ Ophiuchi	2.7	15 13	137
η Ophiuchi	2.6	16 17	156
v Ophiuchi	3.2	16 32	136
η Serpentis	3.4	16 32	118
λ Aquilæ	3.6	17 22	123
θ Aquilæ	3.4	18 18	114
α ² Capricorni	3.8	19 5	145
ε Aquarii	3.8	19 20	136
β Capricorni	3.3	19 22	153
β Aquarii	3.1	19 50	125
γ Aquarii	4.0	20 29	116
λ Aquarii	3.8	21 18	131
ι Ceti	3.8	22 50	134
θ Ceti	3.8	23 52	132
		=	
	*		
,			

				,
Star.	Mag.	L.S.T.	Az.	
	<u>'</u>	h. m.	0	
γ Aquarii λ Aquarii ι Ceti θ Ceti ε Eridani γ Eridani β Orionis γ Orionis ν Orionis ν Orionis ν Orionis κ Orionis ν Orionis κ Orionis ν Orionis κ Orionis κ Orionis κ Orionis κ Οrionis .	4.0 3.8 3.8 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9			ημβαμδηβαζητιθημεαβουνος Το Εδου
	7			
- 4				

NE. QUADRANT SE. QUADRANT

Az.

····				1			
. Star.	Mag.	L. S.T.	Az.		Star.	Mag.	L. S.T.
	Ī	h. m.	0			<u></u>	l h. m.
a Arietis β Trianguli 17 Tauri γ Tauri β Tauri β Tauri β Geminorum β Geminorum β Geminorum β Geminorum β Geminorum β Geminorum β Geminorum β Geminorum β Geminorum β Leonis γ Boötis γ Boötis α Coronæ Boreal β Herculis β Herculis β Herculis γ Herculis γ Herculis γ Lyræ β Cygni ε Cygni ε Cygni ε Cygni γ Pegasi γ Pegasi γ Pegasi γ Pegasi γ Pegasi γ Andromedæ β Andromedæ β Andromedæ β Andromedæ β Andromedæ β Andromedæ β Andromedæ	1·2 2·0 3·1 3·6 2·2 8·8 3·9 3·5 3·3 3·6 3·6 3·7 3·5 3·6 3·7 3·5 3·6 3·7 3·6 3·7 3·7 3·7 3·7 3·7 3·7 3·7 3·7	h. m. 8 0 43 1 46 1 49 2 14 3 23 3 36 4 22 4 47 4 49 5 18 5 55 6 7 47 7 55 9 12 9 43 11 51 12 50 13 45 14 29 15 20 15 57 16 25 17 41 19 16 19 28 20 11 20 52 20 58 21 13 22 20 23 55	63 63 61 63 61 63 61 63 61 63 63 61 63 63 63 64 65 65 65 67 79 71 45 53 66 67 67 67 67 67 67 67 67 67		ζ Ceti ε Eridani δ Eridani γ Eridani β Eridani γ Orionis β Orionis ζ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Canis Majoris δ Monocerotis δ Corvi κ Hydræ δ Corvi κ Virginis β Libræ κ Virginis β Libræ κ Virginis κ Οphiuchi ε Ophiuchi τ Ophiuchi γ Ophiuchi	2·9 4·0 3·4 0·2 2·9 2·9 2·9 2·9 2·3 3·6 4·0 2·3 3·8 3·1 2·7 2·6 3·3 3·3 3·3 3·4 3·6 3·6 3·7 3·6 3·7 3·6 3·7 3·7 3·7 3·7 3·7 3·7 3·7 3·7	h. m. 0 23 2 2 13 2 46 3 22 2 13 3 39 3 4 17 4 18 5 5 6 7 52 10 13 11 58 13 58 14 14 30 15 9 16 28 16 20 19 16 19 47 20 55 21 14 22 46 23 48
	<u> </u>	<u> </u>	1]		<u> </u>	<u> </u>

Az.

•

293

294

NW. QUADRANT

NE. QUADRANT

	1	1	
Star.	Mag.	L. S.T.	Az.
	<u> </u>	h. m.	-
α Arietis	2.2	0 10	61
β Trianguli	3.1	0 50	32
17 Tauri	3.8	1 48	60
η Tauri	3.0	1 51	60
ζ Persei	2.9	2 19	41
L Aurigæ	2.9	3 28	37
ζ Tauri	3.0	3 36	65
β Tauri	1.8	3 39	49
μ Geminorum	3.2	4 24	62
ε Geminorum	3.2	4 50	56
θ Aurigæ	2.7	4 58	23
δ Geminorum	3.5	5 20	63
β Geminorum	1.5	5 58	50
α Geminorum	2.0	6 6	40
ε Leonis	3.1	7 50	59
40 Lyncis	3.3	8 2	31
δ Leonis	2.6	9 14	65
β Leonis	2.2	9 43	77
n Bootis	2.8	11 52	70
ρ Boötis	3.8	12 54	43
ε Boötis	2.7	12 57	51
α Coronæ Boreal.	2.3	13 46	52
δ Boötis	3.2	13 50	35
β Herculis	2.8	14 31	64
ζ Herculis	3.0	15 8	4 i
δ Herculis	3.2	15 22	57
ε Herculis	3.9	15 24	42
μ Herculis	3.5	16 0	50
π Herculis	3.4	16 12	24
γ Lyræ	3.3	17 30	38
β Cygni	3.2	17 44	50
ε Cygni	2.6	19 22	35
ζ Cygni	3.4	19 32	45
ι Pegasi	4.0	20 13	57
μ Pegasi	3.7	20 55	59
η Pegasi	3.1	21 2	46
β Pegasi	2.5	21 16	51
α Andromedæ	2.2	22 23	49
δ Andromedæ		23 0	44
β Andromedæ	2.4	23 53	30
			¦
	-		
			1
		1	1 I
l		1	1

SE. QUADRANT

Star.	Mag.	L. S.T.	Az.
	1	h. m.	0
ζ Ceti	3.9	0 19	133
ε Eridani	3.8	1 58	130
δ Eridani	3.7	29	131
γ Eridani	3.2	2 40	142
β Eridani	2.9	3 20	119
53 Eridani	4.0	3 24	144
β Orionis	0.3	3 35	127
ι Orionis	2.9	3 49	121
μ Leporis	3.3	4 10	151
χ Orionis α Leporis	2·2 2·7	4 13 4 43	130 158
β Canis Majoris	2.0	5 33	158
α Canis Majoris	~I·6	5 45	152
30 Monocerotis	4.0	6 34	116
α Hydræ	2.2	7 48	127
ν Hydræ	3.3	9 44	149
δ Crateris ·	3.8	10 4	144
γ Corvi	2.8	11 19	154
δ Corvi	3.1	11 25	150
α Virginis	1.2	11 54	133
β Libræ	2.7	13 40	129
α Libræ	2.9	13 43	149
μ Serpentis	3.6	13 57	115
δ Ophiuchi	3.0	14 22	116
ε Ophiuchi ζ Ophiuchi	3.3	14 28	118
I A.ll.	2·7 2·6	15 5 16 3	132
0-1:1:	3.2	16 3 16 24	149 131
λ Aquilæ	3.6	17 18	119
α ² Capricorni	3.8	18 55	139
β Capricorni	3.3	19 9	146
ε Aquarii	3.8	19 12	131
β Aquarii	3.1	19 44	IZI
δ Capricorni	3.0	20 46	152
λ Aquarii	3.8	21 II	126
δ Aquarii	3.2	21 52	151
ι Ceti	3.8	22 43 23 45	129
θ Ceti	3.8	23 45	127
1			
			4
<u>]</u>	1 ·		*

NW. QUADRANT

	Star.	Mag.	L. S.T.	Az.	
1			h. m.	0	
	λ Aquarii	3.8	0 25	234	
i	ι Ceti	3.8	I 47	231	
	θ Ceti	3.8	2 55	233	
	ζ Ceti	3.9	3 15	227	
	ε Eridani	3.8	5 0	230	
	γ Eridani δ Eridani	3.2	5 8	218	
	δ Eridani	3.7	5 9	229	
	53 Eridani	4.0	5 44 6 8	216	
	μ Leporis α Leporis	3·3 2·7	6 15	209 202	
	α Leporis β Orionis	0.3	6 47	233	l
	β Eridani	2.9	6 48	24I	
	β Canis Majoris	2.0	7 5	202	
	ι Orionis	2.9	7 13	239	l
	× Orionis	2.2	7 15	230	
	α Canis Majoris	-1.6	7 39	208	
	30 Monocerotis	4.0	10 10	244	
	α Hydræ	2.2	11 0	233	İ
	ν Hydræ	3.3	11 48	211	
	δ Crateris	3.8	12 26	216	
	γ Corvi δ Corvi	2.8	13 5	206	l
		3.I	13 27	210	
	α Virginis	I·2	14 49	227	ŀ
	α Libræ	2.9	15 49	211	
	β Libræ	2.7	16 46	231	
	μ Serpentis δ Ophiuchi	3·6 3·0	17 33 17 58	245 244	l
	ε Ophiuchi	3.3	18 0	242	
	ζ Ophiuchi	2.7	18 1	227	
	η Ophiuchi	2.6	18 9	211	
	v Ophiuchi	3.2	19 26	229	İ
	η Serpentis	3.4	20 6	246	
	λ Aquilæ	3.6	20 46	24 I	
	β Capricorni	3.3	21 23	214	
	α ² Capricorni	3.8	21 33	22 I	
	ε Aquarii	3.8	22 14	229	
	δ Capricorni	3.0	22 40	208	
	β Aquarii	3.1	23 IO 23 48	239	
	δ Aquarii	3.2	23 48	209	

Star.	Mag.	L. S.T.	Az.
		h. m.	0
η Pegasi	3.1	0 16	314
μ Pegasi	3.7	0 37	301
β Pegasi	2.5	0 44	309
α Andromedæ	2.2	I 45	311
δ Andromedæ	3.2	2 10	316
β Andromedæ	2.4	2 17	330
β Trianguli	3.1	3 20	328
α Arietis	2.2	3 56	299
ζ Persei	2·9	5 19	319 300
17 Tauri η Tauri	3.0	5 32 5 35	300
L Aurigæ	2.9	5 35 6 16	323
θ Aurigæ	2.7	6 50	337
β Tauri	1.8	7 2	311
ζ Tauri	3.0	7 29	295
μ Geminorum	3.2	8 12	298
ε Geminorum	3.5	8 28	304
α Geninorum	2.0	8 58	320
δ Geninorum	3.2	9 10	297
β Geminorum	I.5	9 22	310
40 Lyncis	. 3.3	10 30	329
ε Leonis	3.1	11 32	301
δ Leonis β Leonis	2·6 2·2	13 6 13 47	295 283
**	2.8	15 50	290
η <i>Boōlis</i> ρ Boötis	3.8	16 2	317
ε Boötis	2.7	16 25	309
δ Boötis	3.2	16 34	325
α Coronæ Boreal.	2.3	17 16	308
ζ Herculis	3.0	18 81	319
π Herculis	3.4	18 12	336
β Herculis	2.8	18 23	296
ε Herculis	3.9	18 30	318
δ Herculis	3.2	19 2	303
μ Herculis	3.5	19 26	310
γ Lyræ β Cygni	3.3	20 22 21 10	322 310
ε Cygni	2.6	22 4	325
ζ Cygni	3.4	22 46	315
Pegasi	4.0	23 53	303
8	•	0 00	ا ٽا
	*		
	-		
			i
, ,			

Mag. L. S.T. Star. Az. h. m. β Andromedæ ... 2.4 0 I 27 α Arietis ... 2.2 O 12 59 β Trianguli 3.1 0 57 29 17 Tauri 3.8 58 1 51 η Tauri ... ζ Persei ... I 54 3.0 58 38 2.9 2 24 ι Aurigæ ... 2.9 3 34 34 Tauri 63 3.0 3 39 B Tauri 1.8 3 44 4 26 47 60 μ Geminorum ... 3.2 ε Geminorum ... 3.2 54 61 4 53 δ Geminorum ... 5 3.2 23 β Geminorum ... I • 2 2 47 a Geminorum ... 6 6 2.0 37 7 53 8 9 ε Leonis ... 3.1 57 40 Lyncis ... 28 3.3 9 8 20 65 γ¹ Leonis ... 2.6 δ Leonis ... 63 2.6 9 16 β Leonis 2.2 9 44 76 n Boötis 2.8 11 54 68 Boötis 3.8 12 59 4 I s Boötis 2.7 13 49 a Coronæ Boreal. 2.3 13 49 50 δ Boötis ... 3.2 13 57 32 β Herculis 2.8 14 34 62 7 Herculis 15 13 3.0 38 δ Herculis 15 25 3.2 ••• 55 ε Herculis 3.9 15 29 ... 40 μ Herculis 3.2 16 48 γ Lyræ 3.3 17 36 35 4<u>8</u> β Cygni 3.2 17 48 ε Cygni 2.6 19 28 32 ζ Cygni 3.4 19 37 43 Pegasi ... 20 16 4.0 55 μ Pegasi 3.7 20 58 57 7, Pegasi 3.1 2 I 43 β Pegasi 2.5 2I 2O 49 46 α Andromedæ ... 2.2 22 27 8 Andromedæ ... 3.2 4 I 23 5

Star.	Mag.	L. S.T.	Az.
ζ Ceti δ Eridani γ Eridani β Eridani β Eridani β Orionis ι Orionis μ Leporis κ Orionis κ Orionis κ Orionis	3.9 3.8 3.7 3.2 2.9 4.0 0.3 2.9 3.3 2.2	h. m. o 16 I 55 2 6 2 35 3 18 3 19 3 32 3 46 4 3 4 10	130 128 128 139 117 141 124 119 147
α Leporis β Canis Majoris α Canis Majoris 30 Monocerotis α Hydræ ν Hydræ δ Crateris γ Corvi δ Corvi α Virginis	2·7 2·0 -I·6 4·0 2·2 3·3 3·8 2·8 3·I I·2	4 35 5 25 5 38 6 32 7 45 9 37 9 59 11 12 11 19 11 50	154 154 148 114 124 145 141 150 146 130
α Libræ β Libræ ε Ophiuchi γ Ophiuchi ν Ophiuchi λ Aquilæ α² Capricorni β Capricorni ε Aquarii	2·9 2·7 3·3 2·7 2·6 3·5 3·8 3·8 3·8	13 37 13 37 14 26 15 1 15 56 16 21 17 16 18 51 19 3	145 126 116 130 145 128 117 136 143 128
β Aquarii δ Capricorni λ Aquarii δ Aquarii δ Ceti θ Ceti β Ceti	3·1 3·0 3·8 3·5 3·8 3·8 2·2	19 9 19 42 20 39 21 8 21 45 22 39 23 42 23 48	126 119 148 124 147 127 125 155

				1
Star.	Mag.	L. S.T.	Az.	
		h. m.	0	
λ Aquarii	3.8	0 28	236	l
β Ceti	2:2	1 30	205	ļ
Ceti	3.8	1 51	233	ı
θ Ceti	3.8	2 58	235	ı
ζ Ceti	3.9	3 18	230	l
ε Eridani	3.8	5 3	232	
δ Eridani	3.7	5 12	232	١
γ Eridani	3.2	5 13	221	
53 Eridani	4.0	5 49	219	
μ Leporis	3.3	6 15	213	l
α Leporis	2.7	6 23	206	l
β Orionis	0.3	6 50	236	l
β Eridani	2.9	6 50	243	1
β Canis Majoris	2.0	7 13	206	1
c Orionis	2.9	7 16	24 I	
κ Orionis	2.2	7 18	232	l
α Canis Majoris	– 1 ∙6	7 46	212	
30 Monocerotis	4.0	10 12	246	ĺ
α Hydræ	2.2	11 3	236	l
v Hydræ	3.3	11 55	215	ı
δ Crateris	3.8	12 31	219	l
γ Corvi	2.8.	13 12	210	
δ Corvi	3.1	13 33	214	
α Virginis	1.2	14 52	230 215	ı
α Libræ β Libræ	2.9	15 55 16 49	234	
β Libræ δ Ophiuchi	2·7 3·0	18 0	246	
ε Ophiuchi	3.3	18 2	244	
ζ Ophiuchi	2.7	18 5	230	
η Ophiuchi	2.6	18 15	215	
v Ophiuchi	3.2	19 29	232	
λ Aquilæ	3.6	2Ó 4Ś	243	
β Capricorni	3.3	21 29	217	
α ² Capricorni	3.8	21 38	224	
ε Aquarii	3.8	22 17	232	
δ Capricorni	3.0	22 47	212	
β Aquarii	3.1	23 12	24I	
δ Aquarii	3.2	23 56	213	
]				
14.1	500		1 2	
42.5				

			,
Star.	Mag.	L. S.T.	Az.
		h. m.	٥
η Pegasi	3·1	O 12	317
μ Pegasi	3.7	0 34	303
β Pegasi	2.5	0 40	311
α Andromedæ	2.2	I 4I	314
δ Andromedæ	3.2	2 5	319
β Andromedæ	2.4	29	333
β Trianguli	3.1	3 13	331
β Arietis	2.7	3 45	295
α Arietis	2.2	3 54	301
ζ Persei	2.9	5 14	322
17 Tauri	3.8	5 29	302
η Tauri	3.0	5 32	302
i Aurigæ	2.9	6 10	326
β Tauri	1.8	6.58	313
ζ Tauri	3.0	7 27	297
μ Geminorum	3.2	8 10	300
ε Geminorum	3.2	8 25 8 52	306
α Geminorum δ Geminorum	2.0		323
β Geminorum	3·5	9. 7 9.18	299
		9 18	313 332
40 Lyncis ε Leonis	3·1	11 29	303
γ¹ Leonis	2.6	12 10	295
δ Leonis	2.6	13 4	297
β Leonis	2.2	13 46	284
η Boötis	2.8	15 48	292
ρ Boötis	3.8	15 57	319
ε Boötis	2.7	16 22	311
δ Boötis	3.2	16 27	328
α Coronæ Boreal.	2.3	17 13	310
ζ Herculis	3.0	18 3	322
β Herculis	2.8	18 20	298
ε Herculis	3.9	18 25	320
δ Herculis	3.2	18 59	305
μ Herculis	3.2	19 22	312
γ Lyræ	3.3	20 16	325
β Cygni	3.5	21 6	312
ε Cygni	2.6	21 58	328
ζ Cygni	3.4	22 41	317
L Pegasi	4.0	23 50	305
İ			j
	1	×	
l			
	l		
- *-			

L.S.T. Az. Star. Mag. h. m. α Arietis ... 0 15 2.5 57 β Trianguli 3 · I 1 5 25 17 Tauri I 53 56 3.8 n Tauri 3.0 56 I 56 ε Tauri 2 28 66 3.6 ζ Persei 2.9 2 29 35 ι Aurigæ ... 2.9 3 40 31 ζ Tauri 61 3.0 3 41 B Tauri 1.8 3 48 44 μ Geminorum ... 4 28 58 3.2 ε Geminorum ... 3.2 52 4 55 δ Geminorum ... 3.2 59 5 25 β Geminorum ... I • 2 6 6 45 a Geminorum ... 6 12 2.0 34 ε Leonis 7 56 8 17 3.1 55 40 Lyncis ... 3.3 25 γ¹ Leonis ... 63 8 22 2.6 δ Leonis ... 9 18 62 2.6 β Leonis 2.2 9 46 74 n Bootis 66 2.8 11 55 a Boötis ... 65 0.3 12 17 ρ Boötis ... 3.8 13 4 38 ε Boötis ... 2.7 13 47 4 α Coronæ Boreal. 48 2.3 13 53 δ Boötis ... 29 3.2 14 4 γ Herculis 3.8 14 23 65 β Herculis ζ Herculis 2.8 60 14 36 3.0 15 19 35 δ Herculis 3.2 15 28 53 ε Herculis 3.9 15 34 37 μ Herculis 3.2 16 46 7 γ Lyræ 17 42 32 3.3 β Cygni 46 3.5 17 51 ε Cygni 2.6 29 19 35 ζ Cygni 19 41 3.4 40 ι Pegasi ... 4.0 20 19 53 μ Pegasi ... 3.7 2 I I 54 η Pegasi ... 3·1 2I IO 41 β Pegasi ... 2.5 21 23 46 α Andromedæ ... 2.2 22 31 44 δ Andromedæ ... 3.2 23 9 39 β Arietis 63 2.7 23 57

Star.	Mag.	L. S.T.	Az.
Star. Ceti Eridani Eridani Fridani Seridani Seridani Seridani Sorionis Corionis Corionis Canis Majoris Capricorni Corvi	Mag. 3.9 3.8 3.7 3.2 4.0 2.9 0.3 2.7 2.0 6 2.2 3.3 8 2.8 3.1 2.9 2.7 2.9 2.6 3.5 3.8 3.1 3.8 3.1 3.8 3.8 3.1 3.8 3.8 3.8 3.8 3.8 3.8	h. m. 0 12 1 52 2 2 31 3 14 3 16 3 30 3 44 3 57 4 27 5 32 7 42 9 54 11 13 11 46 13 31 11 34 14 58 15 12 15 51 16 18 17 13 18 47 18 58 19 40 20 32 21 38 22 36 23 39 23 41	Az. 128 126 136 138 115 122 117 144 126 150 145 122 142 138 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 143 128 147 142 128 157 142 126 115 126 117 145 127 144 125 123 152
Ž.	!		

SW. QUADRANT

NW. QUADRANT

				
Star.		Mag.	L.S.T.	Az.
			h. m.	٥
δ Aquarii		3.2	0 2	216
λ Aquarii		3.8	0 30	238
β Ceti		2.2	I 37	208
ι Ceti	•••	3.8	I 54	235
0 Ceti		3.8	3 1	237
ζ Ceti	•••	3.9	3 22	232
ε Eridani	• • •	3.8	56	234
δ Eridani		3.7	5 16	234
γ Eridani	•••	3.2	5 17	224
53 Eridani		4.0	5 54	222
μ Leporis	·	3.3	6 21	216
α Leporis		2.7	6 31	210
β Eridani	• • •	2.9	6 52	245
β Orionis		0.3	6 53	238
c Orionis		2.9	7 18	243
х Orionis		2.2	7 21	234
β Canis Majo	ris	2.0	7 21	210
α Canis Majo		-1.6	7 52	215
α Hydræ		2.2	11 6	238
ν Hydræ	•••	3.3	12 0	218
δ Crateris	•••	3.8	12 36	222
γ Corvi	•••	2.8	13 19	213
δ Corvi	•••	3.1	13 39	217
α Virginis	•••	I·2	14 56	232
α Libræ		2.9	16 i	218
β¹ Scorpii	•••	2.9	16 50	203
β Libræ		2.7	16 52	236
ε Ophiuchi		3.3	18 4	246
ζ Ophiuchi		2.7	18 8	232
η Ophiuchi		2.6	18 21	218
v Ophiuchi		3.5	19 32	234
λ Aquilæ	•••	3.6	20 50	245
β Capricorni	•	3.3	21 34	220
α ² Capricorni	•	3.8	21 4I	226
ε Aquarii	•••	3.8	22 20	234
δ Capricorni		3.0	22 54	215
β Aquarii	• • •	3·I	23 14	243
b wdaarn	•••	'	~ J ^4	243
	. 1			
				- 1
				ĺ
1	•		·	ı

			
Star.	Mag.	L. S.T.	Az.
		h. m.	0
Pegasi μ Pegasi μ Pegasi α Andromedæ δ Andromedæ δ Andromedæ β Trianguli α Arietis α Arietis τ Tauri μ Germinorum β Tauri μ Germinorum α Germinorum δ Germinorum δ Germinorum δ Germinorum δ Leonis γ Leonis γ Leonis β Leonis β Doötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Boötis α Coronæ Boreal. ζ Herculis α Herculis α Herculis α Herculis α Pegasi α Cygni α Cygni α Cygni α Cygni α Cygni α Pegasi α Pe	Mag. 3.1 3.7 2.5 2.2 3.8 3.0 2.6 3.1 2.7 2.2 2.8 3.0 2.6 3.1 2.6 2.2 2.8 3.0 2.7 3.5 3.1 2.6 2.2 2.8 3.0 2.7 3.5 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0		
**			
		-	

NE. QUADRANT

SE. QUADRANT

Star.	Mag.	L.S.T.	Az.
		h. m.	0
α Arietis	2.2	о 18	55
17 Tauri	3.8	1 56	53
η Tauri	3.0	1 59	53
ε Tauri	3.6	2 30	64
ζ Persei	2.9	2 35	32
ζ Tauri	3.0	3 44	59
ι Aurigæ	2.9	3 47	28
β Tauri	1.8	3 53	41
μ Geminorum	3.2	4 3 ¹	56
ε Geminorum	3.2	4 59	50
8 Geminorum	3.2	5 28 6 10	57
β Geminorum	1.5		43
α Geminorum	2.0	6 18	31
ε Leonis	3.1	7 59	52
γ¹ Leonis	2.6	8 24	61
δ Leonis	2.6	9 20	60
β Leonis	2.2	9 47	72
η Boötis	2.8	11 57	64
α Boötis	0.2	12 20	63
ε Boötis	2.7	13 8	45
p Boötis α Coronæ Boreal.	3.8	13 10	35
8 Boötis	2.3	13 57	46 26
TT 11	3.2	14 12	
γ Herculis β Herculis	3.8	14 25	63
ζ Herculis	3.0	14 39	58
δ Herculis	3.5	15 25	32
ε Herculis	3.9	15 31	51 34
μ Herculis	3.2	16 11	44
γ Lyræ	3.3	17 49	29
β Cygni	3.5	17 55	44
ε Cygni	2.6	19 43	-26
ζ Cygni	3.4	19 46	38
Pegasi	1 1 1	20 22	51
μ Pegasi	3.7	21 4	52
η Pegasi	٠.٠	21 16	38
β Pegasi	2.5	21 28	44
α Andromedæ	2.2	22 36	4i
δ Andromedæ	3.2	23 15	36
β Arietis	2.7	23 59	Ğт
•	'		
	1	1	
		1	
	1		

1			
Star.	Mag.	L.S.T.	Az.
		h. m.	0
ζ Ceti	3.9	0 9	126
ε Eridani	3.8	I 49	123
δ Eridani	3.7	1 59	124
γ Eridani	3.2	2 27	134
53 Eridani	4.0	3 10	136
β Orionis	· o·3	3 28	120
i Orionis	2.9	3 42	115
μ Leporis	3.3	3 52	141
κ Orionis	2.2	4 4	123
α Leporis	2.7	4 21	146
β Canis Majoris	2.0	5 11	146
α Canis Majoris	–1∙6	5 26	142
α Hydræ	2.2	7 40	120
v Hydræ	3.3	9 27	139
δ Crateris	3⋅8	9 50	135
γ Corvi	2.8	10 59	143
δ Corvi	3.1	11 8	140
α Virginis	1.5	11 43	126
α Libræ	2.9	13 26	139
β Libræ	2.7	13 31	122
ζ Ophiuchi	2.7	14 55	125
β¹ Scorpii	5.0	15 4	152
'η Ophiuchi	2.6	15 46	139
v Ophiuchi	3.5	16 15	124
λ Aquilæ	3.6	17 12	113
α ² Capricorni	3.8	18 43	131
β Capricorni	3.3	18 53	137
ε Aquarii	3.8	19 3	124
β Aquarii	3.1	19 38	115
δ Capricorni	3.0	20 27	142
λ Aquarii	3.8	21 4	120
δ Aquarii	3.2	21 33	141
ι Ceti	3.8	22 34	123
β Ceti θ Ceti	2.2	23 34	148
θ Ceti	3.8	23 37	121
-			
0.2			
ļ			0.41
			1
İ			
1.6			
			l

NW. QUADRANT

				1
Star.	Mag.	L.S.T.	Az.	
8 Aquarii λ Aquarii β Ceti ι Ceti θ Ceti Σ Eridani γ Eridani γ Eridani μ Leporis α Leporis δ Orionis ν Orionis ν Orionis κ Orionis γ Canis Majoris α Canis	3.58 2.88 3.89 3.72 3.73 2.06 2.20 2.33 3.88 3.79 2.20 2.20 2.33 3.88 3.79 2.20 2.20 3.38 3.39 3.39 3.39 3.39 3.39 3.39 3.39	h. 7 32 144 1 56 3 3 25 99 55 56 6 6 55 8 11 13 35 5 59 55 56 6 6 55 8 11 13 14 15 16 16 58 18 19 20 21 22 23 22 23 22 23	219 240 212 237 239 234 237 236 226 224 219 245 237 214 240 221 225 217 220 234 221 225 217 220 234 221 225 221 225 221 226 221 227 220 234 221 221 221 225 221 221 221 221 221 221	
		÷		
,				

Star.	Mag.	L.S.T.	Az.
	1	h. m.	0
η Pegasi	3·1	0 2	322
μ Pegasi	3.7	0 28	308
β Pegasi	2.5	0 32	316
α Andromedæ	2.2	I 32	319
δ Andromedæ	3.2	1 55	324
β Arietis	2.7	3 4 I	299
α Arietis	2.2	3 48	305
ζ Persei	2.9	5 3	328
17 Tauri	3.8	5 24	307
η Tauri	3.0	5 27	307
i Aurigæ	2.9	5 57 6 18	332
ε Tauri	3.6	_	296
β Tauri	1.8	6 49	319
ζ Tauri	3.0	7 22	301
μ Geminorum	3.5	8 5	304
ε Geminotum	3.5	8 19	310
α Geminorum	2.0	8 40	329
8 Geminorum	3.2	9 2	303
β Geminorum	1.2	9 10	317
ε Leonis	3.1	11 23	308
γ^1 Leonis	2.6	12 6	299
& Leonis	2.6	13 0 13 43	300
β Leonis	2.2		288
η Boötis	2.8	15 45	296
ρ Boötis α Boötis	3·8 0·2	15 46 16 4	325
α Boötis δ Boötis	3.2	16 4 16 12	²⁹⁷
ε Boötis	2.7	16 14	315
α Coronæ Boreal.	2.3	17 5	314
ζ Herculis	3.0	17 51	328
γ Herculis	3.8	18 11	297
ε Herculis	3.9	18 14	326
β Herculis	2.8	18 15	302
δ Herculis	3.2	18 53	309
μ Herculis	3.5	19 15	316
· _	3.3	20 3	331
γ Lyræ β Cygni	3.2	20 59	316
ε Cygni	2.6	21 43	334
ζ Cygni	3.4	22 32	322
i Pegasi	4.0	23 44	309
			`
	[

Star.	Mag.	L.S.T.	Az.
β Arietis α Arietis α Arietis	2·7 2·8 3·6 2·9 3·9 1·8 3·2 3·5 1·2 2·6 2·2 2·8 3·3 3·6 2·9 3·6 2·9 3·6 2·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3	h. m. 0 2 0 21 1 59 2 2 32 2 42 3 46 3 56 3 57 4 34 5 3 6 15 6 26 8 2 8 27 9 23 9 48 12 0 12 22 13 13 13 16 14 17 14 41 15 33 15 35 15 47 16 16 17 56 18 0 19 52 20 26 21 7 21 21 21 33 22 41 23 21	59 53 51 53 52 57 53 54 55 54 55 54 55 63 64 55 63 64 55 64 65 64 65 64 65 65 64 65 65 66 66 66 66 66 66 66 66 66 66 66

Star. Mag. L.S.T. Az. δ Aquarii 3.5 0.12 222 λ Aquarii 3.8 0.34 242 β Ceti 2.2 1.50 215 ι Ceti 3.8 1.59 240 θ Ceti 3.8 3.5 241 ζ Ceti 3.9 3.27 236 ε Eridani 3.8 5.12 239 δ Eridani 3.7 5.21 238 γ Eridani 3.2 5.25 229 53 Eridani 4.0 6.2 227 β Leporis 3.3 6.31 222 α Leporis 3.3 6.31 222 α Leporis 2.7 6.43 217 β Orionis 2.2 7.27 239 β Canis Majoris -0.3 6.57 242 α Orionis 2.2 7.27 239 β Crateris 3.8 12.2 42 γ Corvi 2.2 11 10 242 γ Corvi 3.3 12 9	· 			
δ Aquarii 3·5 0 12 222 λ Aquarii 3·8 0 34 242 β Ceti 2·2 1 50 215 ι Ceti 3·8 1 59 240 θ Ceti 3·8 3 5 241 ζ Ceti 3·9 3 27 236 ε Eridani 3·8 5 12 239 δ Eridani 3·7 5 21 238 γ Eridani 3·2 5 25 229 53 Eridani 4·0 6 2 227 β Leporis 3·3 6 31 222 β Leporis 3·3 6 31 222 β Canis Majoris 2·7 6 43 217 β Canis Majoris 2·0 7 33 217 α Canis Majoris 1·6 8 2 221 α Cytronis 2·2 7 27 239 δ Crateris 3·8 12 44 227 <tr< th=""><th>Star.</th><th>Mag.</th><th>L.S.T.</th><th>Az.</th></tr<>	Star.	Mag.	L.S.T.	Az.
δ Aquarii 3.5 0 12 222 λ Aquarii 3.8 0 34 242 β Ceti 3.8 1 59 240 θ Ceti 3.8 3 5 241 ζ Ceti 3.9 3 27 236 ε Eridani 3.8 5 12 239 δ Eridani 3.7 5 21 238 γ Eridani 3.7 5 21 238 γ Eridani 3.2 5 25 229 53 Eridani 4.0 6 2 227 β Leporis 3.0 6 21 207 μ Leporis 3.3 6 31 222 α Corionis 2.7 6 43 217 β Canis Majoris 2.0 7 33 217 α Canis Majoris -1.6 8 2 221 α Canis Majoris -1.6 8 2 221 α Canis Majoris -1.6 8 2 221 α Corvi			h. m.	1 0
λ Aquarii 3·8 0 34 242 β Ceti 2·2 1 50 215 ι Ceti 3·8 1 59 240 θ Ceti 3·8 3 5 241 ζ Ceti 3·9 3 27 236 ε Eridani 3·9 3 27 236 ε Eridani 3·8 5 12 239 δ Eridani 3·7 5 21 238 γ Eridani 3·2 5 25 229 53 Eridani 4·0 6 2 227 β Leporis 3·3 6 31 222 β Leporis 3·3 6 31 222 β Crahis Majoris 2·0 6 43 217 β Canis Majoris 2·0 7 33 217 α Canis Majoris 2·0 7 33 217 α Canis Majoris 1·0 8 2 221 α Chisa 3·3 12 44 227	& Aquarii	2.5		222
β Ceti 2·2 I 50 215 ι Ceti 3·8 I 59 240 θ Ceti 3·8 3 5 241 ζ Ceti 3·9 3·27 236 ε Eridani 3·8 5 I2 239 δ Eridani 3·7 5 2I 238 γ Eridani 3·7 5 2I 238 γ Eridani 3·2 5 25 229 β Leporis 3·0 6 2I 207 β Leporis 3·3 6 3I 222 β Leporis 3·3 6 3I 222 β Crionis 2·7 6 43 217 β Orionis 2·2 7 27 239 β Canis Majoris 2·0 7 33 217 α Canis Majoris 2·0 7 33 217 α Chydræ 3·3 I2 9 223 δ Crateris 3·8 I2 44 227				1
t Ceti 3.8 1 59 240 θ Ceti 3.8 3 5 241 ζ Ceti 3.9 3 27 236 ε Eridani 3.8 5 12 239 δ Eridani 3.7 5 21 238 γ Eridani 3.7 5 21 238 γ Eridani 3.2 5 25 229 53 Eridani 4.0 6 2 227 β Leporis 3.0 6 21 207 μ Leporis 3.3 6 31 222 α Leporis 2.7 6 43 217 β Orionis 2.2 7 27 239 β Canis Majoris 2.0 7 33 217 α Canis Majoris 2.0 7 33 217 α Canis Majoris 2.1 10 242 γ Hydræ 3.3 12 9 223 δ Crateris 3.8 12 44 227 <td></td> <td></td> <td></td> <td></td>				
θ Ceti 3.8 3 5 241 ζ Ceti 3.9 3 27 236 ε Eridani 3.8 5 12 239 δ Eridani 3.7 5 21 238 γ Eridani 3.2 5 25 229 53 Eridani 4.0 6 2 227 β Leporis 3.0 6 21 207 μ Leporis 2.7 6 43 217 β Orionis 2.2 7 27 239 β Canis Majoris 2.0 7 33 217 α Canis Majoris 2.0 7 33 217 α Canis Majoris 2.0 7 33 217 α Canis Majoris 2.1 8 2 221 α Hydræ 2.2 11 10 242 γ Hydræ 3.3 12 9 223 δ Crateris 3.8 12 44 227 γ Corvi 2.8 13 30 220 δ Corvi				
ζ Ceti 3.9 3 27 236 ε Eridani 3.8 5 12 239 δ Eridani 3.7 5 21 238 γ Eridani 3.7 5 21 228 γ Eridani 3.2 5 25 229 53 Eridani 4.0 6 2 227 β Leporis 3.0 6 21 207 μ Leporis 2.7 6 43 217 β Orionis 2.7 6 43 217 β Orionis 2.2 7 27 239 β Canis Majoris 2.0 7 33 217 α Canis Majoris 2.0 7 33 217 α Canis Majoris -1.6 8 2 221 α Hydræ 2.2 11 10 242 γ Hydræ 3.3 12 9 223 δ Crateris 3.8 12 44 227 γ Corvi 2.8 13 <		2.8		
E Eridani 3.8 5 12 239 δ Eridani 3.7 5 21 238 γ Eridani 3.7 5 21 238 γ Eridani 4.0 6 2 227 β Leporis 3.0 6 21 207 μ Leporis 2.7 6 43 217 β Orionis 0.3 6 57 242 χ Orionis 2.2 7 27 239 β Canis Majoris 2.0 7 33 217 α Canis Majoris -1.6 8 2 221 α Hydræ 2.2 11 10 242 ν Hydræ 3.3 12 9 223 δ Crateris 3.8 12 44 227 γ Corvi 2.8 13 30 220 δ Corvi 3.1 13 49 223 α Virginis 1.2 15 2 236 α Libræ 2.9 16 10 224 β Libræ 2.9 16 57 240 β¹ Scorpii 2.9 16 57 240 β¹ Scorpii 2.9 16 57 240 β¹ Scorpii 2.9 16 57 240 β¹ Scorpii 2.9 17 5 211 ζ Ophiuchi 2.7 18 14 237 η Ophiuchi 2.6 18 30 224 μ Sagittarii 4.0 19 1 205 ν Ophiuchi 2.6 18 30 224 μ Sagittarii 3.6 19 44 204 π Sagittarii 3.6 19 44 204 π Sagittarii 3.6 19 44 204 π Sagittarii 3.6 19 44 204 π Sagittarii 3.6 19 44 204 π Sagittarii 3.6 19 44 204 π Sagittarii 3.6 20 54 249 β Capricorni 3.8 21 48 231 ε Aquarii 3.8 22 26 238 δ Capricorni 3.8 22 26 238 δ Capricorni 3.8 22 26 238				
δ Eridani 3·7 5 21 238 γ Eridani 3·2 5 25 229 53 Eridani 4·0 6 2 227 β Leporis 3·0 6 21 207 μ Leporis 2·7 6 43 217 β Orionis 2·2 7 27 239 β Canis Majoris 2·0 7 33 217 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221 α Hydræ 2·2 11 10 242 γ Hydræ 3·3 12 9 223 δ Crateris 3·8 12 44 227 γ Corvi 2·8 13 30 220 δ Corvi 3·1 13 49 223 α Virginis 1·2 15 2 236 α Libræ 2·9 16 10 224 β Libræ 2·9 16 57 240		3.8		
γ Eridani 3·2 5 25 229 53 Eridani 4·0 6 2 227 β Leporis 3·0 6 21 207 μ Leporis 2·7 6 43 217 β Orionis 2·2 6 43 217 β Orionis 2·2 7 27 239 β Canis Majoris 2·0 7 33 217 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221				
53 Eridani 4·0 6 2 227 β Leporis 3·0 6 21 207 μ Leporis 2·7 6 43 217 β Orionis 2·2 6 43 217 β Orionis 2·2 7 27 239 β Canis Majoris 2·0 7 33 217 α Canis Majoris -1·6 8 2 221 α Canis Majoris -1·6 8 2 221 α Hydræ 2·2 11 10 242 γ Hydræ 3·3 12 9 223 δ Crateris 3·8 12 44 227 γ Corvi 2·8 13 30 220 δ Corvi 3·1 13 49 223 α Virginis 1·2 15 2 236 α Libræ 2·9 16 10 224 β Libræ 2·7 18 14 237 η Ophiuchi 2·6 18 30 224 <t< td=""><td></td><td></td><td>, -</td><td></td></t<>			, -	
β Leporis 3.0 6 21 207 μ Leporis 3.3 6 31 222 α Leporis 2.7 6 43 217 β Orionis 0.3 6 57 242 α Orionis 2.2 7 27 239 β Canis Majoris 2.0 7 33 217 α Canis Majoris -1.6 8 2 221 α Hydræ 2.2 11 10 242 ν Hydræ 3.3 12 9 223 δ Crateris 3.8 12 44 227 γ Corvi 2.8 13 30 220 δ Corvi 3.1 13 49 223 α Virginis 1.2 15 2 236 α Libræ 2.9 16 10 224 β Libræ 2.9 16 57 240 β¹ Scorpii 2.9 16 57 240 β¹ Scorpii 2.9 16 57 240 β¹ Scorpii 2.9 16 57 240 β¹ Scorpii 2.9 17 5 211 ζ Ophiuchi 2.7 18 14 237 η Ophiuchi 2.6 18 30 224 μ Sagittarii 4.0 19 1 205 ν Ophiuchi 2.6 18 30 224 μ Sagittarii 4.0 19 1 205 ν Ophiuchi 3.5 19 38 238 ξ Sagittarii 3.6 19 44 204 π Sagittarii 3.6 19 56 205 λ Aquilæ 3.6 20 54 β Capricorni 3.3 21 43 225 α² Capricorni 3.8 21 48 231 ε Aquarii 3.8 22 26 238 δ Capricorni 3.8 22 26 238			6 2	
Leporis 3·3 6 31 222 α Leporis 2·7 6 43 217 β Orionis 0·3 6 57 242 α Orionis 2·2 7 27 239 β Canis Majoris 2·0 7 33 217 α Canis Majoris -1·6 8 2 221 α Hydræ 2·2 11 10 242 ν Hydræ 3·3 12 9 223 δ Crateris 3·8 12 44 227 γ Corvi 2·8 13 30 220 δ Corvi 3·1 13 49 223 α Virginis 1·2 15 2 236 α Libræ 2·9 16 10 224 β Libræ 2·9 16 57 240 β¹Scorpii 2·9 16 57 240 β¹Scorpii 2·9 17 5 211 ζ Ophiuchi 2·7 18 14 237 η Ophiuchi 2·6 18 30 224 μ Sagittarii 4·0 19 1 205 ν Ophiuchi 2·6 18 30 224 μ Sagittarii 4·0 19 1 205 ν Ophiuchi 2·6 18 30 224 μ Sagittarii 3·6 19 44 204 π Sagittarii 3·6 19 44 204 π Sagittarii 3·6 19 56 205 λ Aquilæ 3·6 20 54 249 β Capricorni 3·8 21 48 231 ε Aquarii 3·8 22 26 238 δ Capricorni 3·8 22 26 238	30			
α Leporis 2.7 6 43 217 β Orionis 0.3 6 57 242 α Orionis 2.2 7 27 239 β Canis Majoris -1.6 8 2 221 α Canis Majoris -1.6 8 2 221 α Hydræ 2.2 11 10 242 ν Hydræ 3.3 12 9 223 δ Crateris 3.8 12 44 227 γ Corvi 2.8 13 30 220 δ Corvi 2.8 13 30 220 δ Corvi 2.8 13 30 220 δ Corvi 2.8 13 30 223 α Virginis 1.2 15 2 236 α Libræ 2.9 16 10 224 β Libræ 2.7 16 57 240 β Scorpii 2.6 18 30 224 γ Ophiuchi 2.6 18 30 224 <				-
β Orionis 0-3 6 57 242 χ Orionis 2-2 7 27 239 β Canis Majoris 2-0 7 33 217 α Canis Majoris -1-6 8 2 221 α Hydræ 2-2 11 10 242 ν Hydræ 3·3 12 9 223 δ Crateris 3·8 12 44 227 γ Corvi 2·8 13 30 220 δ Corvi 3·1 13 49 223 α Virginis 1·2 15 2 236 α Libræ 2·9 16 10 224 β Libræ 2·9 16 57 240 β¹Scorpii 2·9 16 57 240 β¹Scorpii 2·9 17 5 211 ζ Ophiuchi 2·7 18 14 237 η Ophiuchi 2·6 18 30 224 μ Sagittarii 4·0 19 1 205 ν Ophiuchi 2·6 18 30 224 μ Sagittarii 4·0 19 1 205 ν Ophiuchi 3·5 19 38 238 ξ Sagittarii 3·6 19 44 204 π Sagittarii 3·6 19 44 204 π Sagittarii 3·6 19 56 205 λ Aquilæ 3·6 20 54 249 β Capricorni 3·3 21 43 225 α² Capricorni 3·8 21 48 231 ε Aquarii 3·8 22 26 238 δ Capricorni 3·8 22 26 238				
κ Orionis 2·2 7 27 239 β Canis Majoris 2·0 7 33 217 α Canis Majoris -1·6 8 2 221 α Hydræ 2·2 II 10 242 ν Hydræ 3·3 I2 9 223 δ Crateris 3·8 I2 44 227 γ Corvi 2·8 I3 30 220 δ Corvi 3·1 I3 49 223 α Virginis I·2 I5 2 236 α Libræ 2·9 I6 I0 224 β Libræ 2·9 I6 57 240 β Isorpii 2·9 I7 5 211 ζ Ophiuchi 2·6 I8 30 224 μ Sagittarii 4·0 I9 I 205 ν Ophiuchi 3·5 I9 38 238 ξ Sagittarii 3·6 19 44 204 π Sagittarii 3·6 20 54 249				
β Canis Majoris 2.0 7 33 217 α Canis Majoris -1.6 8 2 221 α Hydræ 2.2 11 10 242 ν Hydræ 3.3 12 9 223 δ Crateris 3.8 12 44 227 γ Corvi 2.8 13 30 220 δ Corvi 3.1 13 49 223 α Virginis 1.2 15 2 236 α Libræ 2.9 16 10 224 β Libræ 2.7 16 57 240 β Scorpii 2.9 17 5 211 ζ Ophiuchi 2.27 18 14 237 η Ophiuchi 2.6 18 30 224 μ Sagittarii 4.0 19 1 205 ν Ophiuchi 3.5 19 38 238 ξ Sagittarii 3.6 19 44 204 π Sagittarii 3.6 20 54 249 β Capricorni 3.8 21 43 225 α² Capricorni 3.8 21 48 231 ε Aquar		_	1 -,	
α Canis Majoris -1·6 8 2 221 α Hydræ 2·2 11 10 242 ν Hydræ 3·3 12 9 223 δ Crateris 3·8 12 44 227 γ Corvi 2·8 13 30 220 δ Corvi 3·1 13 49 223 α Virginis 1·2 15 2 236 α Libræ 2·9 16 10 224 β Libræ 2·7 16 57 240 β Scorpii 2·9 17 5 211 ζ Ophiuchi 2·7 18 14 237 η Ophiuchi 2·6 18 30 224 μ Sagittarii 4·0 19 1 205 ν Ophiuchi 3·5 19 38 238 ξ Sagittarii 3·6 19 44 204 π Sagittarii 3·6 20 54 249 β Capricorni </td <td></td> <td></td> <td></td> <td></td>				
α Hydræ 2·2 II 10 242 ν Hydræ 3·3 I2 9 223 δ Crateris 3·8 I2 44 227 γ Corvi 2·8 I3 30 220 δ Corvi 3·1 I3 49 223 α Virginis I·2 I5 2 236 α Libræ 2·9 I6 I0 224 β Libræ 2·7 I6 57 240 β Scorpii 2·9 I7 5 211 ζ Ophiuchi 2·6 I8 30 224 μ Sagittarii 4·0 I9 I 205 ν Ophiuchi 3·5 I9 38 238 ξ Sagittarii 3·6 I9 44 204 π Sagittarii 3·6 20 54 249 β Capricorni 3·8 21 48 231 ε Aquarii 3·8 2				
V Hydræ 3·3 12 9 223 δ Crateris 3·8 12 44 227 γ Corvi 2·8 13 30 220 δ Corvi 3·1 13 49 223 α Virginis 1·2 15 2 236 α Libræ 2·9 16 10 224 β Libræ 2·7 16 57 240 β Scorpii 2·9 17 5 211 ζ Ophiuchi 2·7 18 14 237 η Ophiuchi 2·6 18 30 224 μ Sagittarii 4·0 19 1 205 γ Ophiuchi 3·5 19 38 238 ξ Sagittarii 3·6 19 44 204 π Sagittarii 3·6 20 54 249 β Capricorni 3·8 21 48			_	1
δ Crateris 3.8 12 44 227 γ Corvi 2.8 13 30 220 δ Corvi 3.1 13 49 223 α Virginis 1.2 15 2 236 α Libræ 2.9 16 10 224 β Libræ 2.7 16 57 240 β¹ Scorpii 2.9 17 5 211 ζ Ophiuchi 2.7 18 14 237 η Ophiuchi 2.6 18 30 224 μ Sagittarii 3.5 19 38 238 ξ Sagittarii 3.6 19 44 204 π Sagittarii 3.6 20 54 249 β Capricorni 3.8 21 43 225 α² Capricorni 3.8 21 48 231 ε Aquarii 3.8 22 26 238 δ Capricorni 3.0 23 4 221			1	
γ Corvi 2.8 13 30 220 δ Corvi 3.1 13 49 223 α Virginis 1.2 15 2 236 α Libræ 2.9 16 10 224 β Libræ 2.7 16 57 240 β¹ Scorpii 2.7 18 14 237 η Ophiuchi 2.6 18 30 224 μ Sagittarii 4.0 19 1 205 γ Ophiuchi 3.5 19 38 238 ξ Sagittarii 3.6 19 44 204 π Sagittarii 3.6 19 44 204 π Sagittarii 3.6 19 56 205 λ Aquilæ 3.6 20 54 249 β Capricorni 3.8 21 43 225 α² Capricorni 3.8 21 48 231 ε Aquarii 3.8 22 26 238 δ Capricorni 3.0 23 4 221				
δ Corvi 3·I I3 49 223 α Virginis I·2 I5 2 236 α Libræ 2·9 I6 I0 224 β Libræ 2·7 I6 57 240 β¹ Scorpii 2·9 I7 5 21I ζ Ophiuchi 2·6 I8 30 224 μ Sagittarii 4·0 I9 I 205 ν Ophiuchi 3·5 I9 38 238 ξ Sagittarii 3·6 I9 44 204 π Sagittarii 3·6 20 54 249 β Capricorni 3·8 21 43 225 α² Capricorni 3·8 21 48 23I ε Aquarii 3·8 22 26 238 δ Capricorni 3·0 23 4 22I	~ .			
α Virginis 1·2 15 2 236 α Libræ 2·9 16 10 224 β Libræ 2·7 16 57 240 β¹Scorpii 2·9 17 5 211 ζ Ophiuchi 2·6 18 30 224 μ Sagittarii 4·0 19 1 205 ν Ophiuchi 3·5 19 38 238 ξ Sagittarii 3·6 19 44 204 π Sagittarii 3·6 19 44 204 π Sagittarii 3·6 20 54 249 β Capricorni 3·3 21 43 225 α²Capricorni 3·8 21 48 231 ε Aquarii 3·8 22 26 238 δ Capricorni 3·0 23 4 221				
α Libræ 2.9 16 10 224 β Libræ 2.7 16 57 240 β¹ Scorpii 2.9 17 5 211 ζ Ophiuchi 2.7 18 14 237 η Ophiuchi 2.6 18 30 224 μ Sagittarii 4.0 19 1 205 ν Ophiuchi 3.5 19 38 238 ξ Sagittarii 3.6 19 44 204 π Sagittarii 3.6 20 54 249 β Capricorni 3.3 21 43 225 α² Capricorni 3.8 21 48 231 ε Aquarii 3.8 22 26 238 δ Capricorni 3.0 23 4 221				
β Libræ 2.7 16 57 240 β¹Scorpii 2.9 17 5 211 ζ Ophiuchi 2.6 18 30 224 μ Sagittarii 4.0 19 1 205 ν Ophiuchi 3.5 19 38 238 ξ Sagittarii 3.6 19 44 204 π Sagittarii 3.0 19 56 205 λ Aquilæ 3.6 20 54 249 β Capricorni 3.3 21 43 225 α²Capricorni 3.8 21 48 231 ε Aquarii 3.8 22 26 238 δ Capricorni 3.0 23 4 221				
β¹ Scorpii 2·9 17 5 211 ζ Ophiuchi 2·7 18 14 237 η Ophiuchi 2·6 18 30 224 μ Sagittarii 4·0 19 1 205 ν Ophiuchi 3·5 19 38 238 ξ Sagittarii 3·6 19 44 204 π Sagittarii 3·0 19 56 205 λ Aquilæ 3·6 20 54 249 β Capricorni 3·3 21 43 225 α² Capricorni 3·8 21 48 231 ε Aquarii 3·8 22 26 238 δ Capricorni 3·0 23 4 221			· -	
Cophiuchi 2·7 18 14 237 η Ophiuchi 2·6 18 30 224 μ Sagittarii 4·0 19 1 205 ν Ophiuchi 3·5 19 38 238 ξ Sagittarii 3·6 19 44 204 π Sagittarii 3·0 19 56 205 λ Aquilæ 3·6 20 54 249 β Capricorni 3·3 21 43 225 α² Capricorni 3·8 21 48 231 ε Aquarii 3·8 22 26 238 δ Capricorni 3·0 23 4 221	B1 Scorpii		, ,	
η Ophiuchi 2.6 18 30 224 μ Sagittarii 4.0 19 1 205 ν Ophiuchi 3.5 19 38 238 ξ Sagittarii 3.6 19 44 204 π Sagittarii 3.0 19 56 205 λ Aquilæ 3.6 20 54 249 β Capricorni 3.3 21 43 225 α² Capricorni 3.8 21 48 231 ε Aquarii 3.8 22 26 238 δ Capricorni 3.0 23 4 221		-		
μ Sagittarii 4.0 19 1 205 ν Ophiuchi 3.5 19 38 238 ξ Sagittarii 3.6 19 44 204 π Sagittarii 3.0 19 56 205 λ Aquilæ 3.6 20 54 249 β Capricorni 3.3 21 43 225 α² Capricorni 3.8 21 48 231 ε Aquarii 3.8 22 26 238 δ Capricorni 3.0 23 4 221				
ν Ophiuchi 3·5 19 38 238 ξ Sagittarii 3·6 19 44 204 π Sagittarii 3·0 19 56 205 λ Aquilæ 3·6 20 54 249 β Capricorni 3·3 21 43 225 α² Capricorni 3·8 21 48 231 ε Aquarii 3·8 22 26 238 δ Capricorni 3·0 23 4 221			, ,	
ξ Sagittarii 3.6 19 44 204 π Sagittarii 3.0 19 56 205 λ Aquilæ 3.6 20 54 249 β Capricorni 3.3 21 43 225 α² Capricorni 3.8 21 48 231 ε Aquarii 3.8 22 26 238 δ Capricorni 3.0 23 4 221	v Ophiuchi			
π Sagittarii 3·0 19 56 205 λ Aquilæ 3·6 20 54 249 β Capricorni 3·3 21 43 225 α² Capricorni 3·8 21 48 231 ε Aquarii 3·8 22 26 238 δ Capricorni 3·0 23 4 221		3.6		
A Aquilæ 3.6 20 54 249 β Capricorni 3.3 21 43 225 α² Capricorni 3.8 21 48 231 ε Aquarii 3.8 22 26 238 δ Capricorni 3.0 23 4 221				
β Capricorni 3·3 21 43 225 α ² Capricorni 3·8 21 48 231 ε Aquarii 3·8 22 26 238 δ Capricorni 3·0 23 4 221	λ Aquila	3.6		
α ² Capricorni 3·8 21 48 231 ε Aquarii 3·8 22 26 238 δ Capricorni 3·0 23 4 221			21 43	225
ε Aquarii 3.8 22 26 238 8 Capricorni 3.0 23 4 221		3.8		
8 Capricorni 3.0 23 4 221				
c ² Aquarii 3.8 23 53 203	δ Capricorni	3.0	23 4	
J == 1	c ² Aquarii	3.8	23 53	203
	0 114 111111111111111111111111111111111			
			*	
· ·				
,				T
	18			
	,	4		1-
				l

Star.	Mag.	L.S.T.	Az.
		h. m.	0
μ Pegasi	3.7	0 25	310
β Pegasi	2.5	0 27	319
α Andromedæ	2.2	I 27	321
δ Andromedæ	3.5	I 49	327
β Arietis	2.7	3 38	301
α Arietis	2.2	3 45	307
ζ Persei	2.9	4 56	331
17 Tauri	3.8	5 21	309
η Tauri	3.0	5 24	309
ι Aurigæ ε Tauri	2·9 3·6	5 48 6 16	336
	1.8	6 45	297 321
β Tauri ζ Tauri	3.0	7 20	303
μ Geminorum	3.5	8 2	306
ε Geminorum	3.2	8 15	312
α Geminorum	2.0	8 32	332
δ Geminorum	3.2	9 0	305
β Geminorum	1.2	9 5	320
ε Leonis	3.1	II 20	310
γ¹ Leonis	2.6	12 3	301
δ Leonis	2.6	12 57	302
β Leonis	2.2	13 42	290
ρ Boötis	3.8	15 40	328
η Boötis	2.8	15 42 16 2	297
α Boötis ε Boötis	0.2	_	299
~ T 1	2·7 2·3	16 9 17 1	318
α Coronæ Boreal. ζ Herculis	3.0	17 43	317 332
ε Herculis	3.9	18 7	329
γ Herculis	3.8	18 9	298
β Herculis	2.8	18 13	304
δ Herculis	3.2	18 49	311
μ Herculis	3.2	19 10	319
γ Lyræ	3.3	19 56	334
β Cygni	3.2	20 54	319
ζ Cygni	3.4	22 26	325
Pegasi	4.0	23 40	311
η Pegasi	3.1	23 57	325
1			
4			
			j
			I
	}		
			1
			ļ
		İ	ŀ

NE. QUADRANT

DRANT SE. QUADRANT

Star. Mag. L.S.T. Az. Star. Mag. L.S.T. Az.				 -	1				ī	
β Arietis 2.77 0 4 57 α Arietis 3.9 0 4 122 α Arietis 2.2 0 24 51 ε Eridani 3.8 1 44 119 17 Tauri 3.3 2 3 49 γ Eridani 3.7 1 55 120 γ Tauri 3.0 2 6 49 γ Eridani 3.2 2 20 129 ζ Persei 2.9 2 50 26 β Orionis 0.03 3 23 116 ζ Persei 2.9 2 50 26 β Orionis 0.03 3 23 116 γ Tauri 1.8 4 2 36 μ Leporis 2.2 3 9 119 β Tauri 1.18 4 2 36 α Leporis 2.2 3 9 119 β Geminorum 3.2 5 7 45 6 6 Leporis 3.3	Star.	Mag.	L. S.T.	Az.		Star.		Mag.	L.S.T.	Az.
α Arietis 2.2 0 24 51 se Eridani 3.8 1 44 119 17 Tauri 3.8 2 3 49 8 Eridani 3.7 1 55 120 η Tauri 3.0 2 6 49 γ Eridani 3.2 2 20 129 ε Tauri 1.1 2 38 65 β Orionis 0.03 3 23 116 ζ Persei 2.9 2 50 26 μ Leporis 3.3 3 43 135 ζ Tauri 1.8 4 2 36 μ Leporis 2.2 3 59 119 β Tauri 1.8 4 2 36 μ Leporis 2.2 3 59 119 γ Geminorum 1.9 4 40 65 β Leporis 3.3 4 13 157 γ Geminorum 1.2 5 7 45 β Canis Majoris 2-0 5 0 140 α Geminorum 1.2 5 7 45 6 Canis Majoris 2-0 5 0 140 α Leonis 2.0 6 34 <td></td> <td> </td> <td>h. m.</td> <td>l °</td> <td></td> <td>12</td> <td></td> <td>İ</td> <td>h. m.</td> <td>l °</td>			h. m.	l °		12		İ	h. m.	l °
17 Tauri 3·8 2 3 49 δ Eridani 3·7 I 55 I 20 η Tauri 3·6 2 35 61 53 Eridani 3·2 2 20 129 ε Tauri 1·1 2 38 65 β Orionis 0·3 3 23 116 ζ Persei 2·9 2 50 26 μ Leporis 3·3 3 4 135 ζ Tauri 1·8 4 2 36 α Leporis 2·2 3 59 119 β Tauri 1·8 4 2 36 α Leporis 2·2 4 13 157 γ Geminorum 3·2 5 7 4 6 6 Leporis 3·0 4 2·2 150 ε Geminorum 3·2 5 7 4.5 β Leporis 3·3						9	•••		0 4	
Tauri 3.6 2 6 49			1		1		•••			
E Tauri 3.6	·		, ,							
α Tauri 1·1 2 38 65 β Orionis 0·3 3 23 116 ζ Persei 2·9 2 50 26 μ Leporis 3·3 3 43 135 ζ Tauri 1·8 4 2 36 μ Leporis 2·2 3 59 119 μ Geminorum 1·9 4 4 2 36 μ Leporis 2·2 4 1140 μ Geminorum 1·9 4 4 0 65 β Leporis 3·3 4 13 157 γ Geminorum 3·2 5 7 45 β Leporis 3·3 4 13 157 β Geminorum 3·5 5 33 53 α Canis Majoris 2·0 5 140 α Eleonis 3·1 8 5 48 8 Cratis Majoris 2·0 16 4 4 4 4 4 4 4 4	Tour				l	l ' 				
ζ Persei 2·9 2·50 26 ζ Tauri 3·0 3·49 55 χ Geminorum 1·8 4 2 36 μ Geminorum 1·8 4 2 36 μ Leporis 2·7 4 10 140 μ Geminorum 1·9 4 40 65 6 Leporis 3·3 4 13 157 γ Geminorum 3·5 5 33 53 3 4 12 150 β Geminorum 3·2 5 7 45 5 6 Canis Majoris 2·0 5 0 140 α Geminorum 1·2 6 20 37 α A Hydræ 2·2 7 36 116 α Geminorum 2·0 6 34 24 24 4 4 4 4 24 4 4 4 2 2 7 36 116 16 2 16 2 <	» Тонгі	1 -							_	_
ζ Tauri 3 ° 0 3 49 55 x Orionis 2 ° 2 3 59 119 β Tauri 18 8 4 2 36 x Leporis 2 ° 7 4 10 140 μ Geminorum 3 ° 2 4 37 52 ε Leporis 3 ° 3 4 13 157 γ Geminorum 3 ° 2 5 ° 7 45 β Leporis 3 ° 0 4 22 150 ε Leporis 3 ° 0 4 22 150 ε Leporis 3 ° 0 4 22 150 ε Leporis 3 ° 0 4 22 150 ε Leporis 3 ° 0 4 22 150 ε Canis Majoris 2 ° 0 5 ° 0 140 α Canis Majoris 2 ° 0 5 ° 0 140 α Canis Majoris 2 ° 0 5 ° 0 140 α Canis Majoris 2 ° 0 5 ° 0 140 α Canis Majoris 2 ° 0 5 ° 0 140 α Canis Majoris 2 ° 0 2 ° 0 6 ° 20 3 ° 0 α Canis Majoris 2 ° 0 2 ° 0 6 ° 0 6 ° 0 α ° 0 α										
Tauri	ζ Tauri	1	_							
γ Geminorum 1·9 4 40 65 β Leporis 3·0 4 22 150 ε Geminorum 3·2 5 7 45 β Canis Majoris 2·0 5 0 140 δ Geminorum 3·5 5 33 53 α Canis Majoris 2·0 5 0 140 α Geminorum 1·2 6 20 37 α Hydræ 2·2 7 36 116 α Geminorum 2·0 6 34 24 γ Hydræ 3·3 9 18 134 ε Leonis 3·1 8 5 48 γ Corvi 2·8 10 50 138 δ Leonis 2·6 9 26 56 δ Corvi 3·1 10 59 135 β Leonis 2·2 9 50 69 ε Corvi 3·2 11 14 155 η Boötis 2·2 9 50 69 ε Corvi 3·2 11 14 155 η Boötis 2·2 13 18 39 β Libræ 2·9 13 18 132 α Boötis 3·3 14 6 40 γ Coronæ Boreal 2·3 14 6 40	β Tauri			36	l	α Leporis	•••		-	
ε Geminorum 3·2 5·7 45 β Canis Majoris 2·0 5 0 140 δ Geminorum 3·5 5 33 53 α Canis Majoris -1·6 5 18 136 β Geminorum 1·2 6 20 37 α Hydræ 2·2 7 36 116 α Geminorum 2·0 6 34 24 v Hydræ 2·2 7 36 116 α Leonis 3·1 8 5 48 δ Crateris 3·8 9 43 130 γ Leonis 2·6 8 29 57 δ Corvi 2·8 10 50 138 δ Leonis 2·6 9 26 56 δ Corvi 3·1 10 59 135 β Leonis 2·2 9 50 69 ε Corvi 3·2 11 14 155 η Böötis 2·2 9 50 69 ε Corvi 3·2 11 138 122 α Böötis 2·2 13 18 39 β Libræ 2·2 13 18 134 ρ Böötis		3.2	4 37				•••	3.3	4 13	*
δ Geminorum 3·5 5 33 53 α Canis Majoris -1·6 5 18 136 β Geminorum 1·2 6 20 37 α Hydræ 2·2 7 36 116 α Eleonis 3·1 8 5 48 δ Crateris 3·3 9 18 134 γ¹ Leonis 2·6 8 29 57 γ Corvi 2·8 10 50 138 δ Leonis 2·6 9 26 56 69 6 Corvi 3·1 10 59 135 β Leonis 2·2 9 50 69 69 6 Corvi 3·1 10 59 135 β Leonis 2·2 9 50 69 69 6 Corvi 3·2 11 14 155 η Boötis 2·2 9 50 69 69 6 Corvi 3·2 11 14 155 η Boötis 2·2 9 50 69 69 6 Corvi 3·2 11 14 155 η Boötis 2·2 9 50 69 69 6 Corvi 3·2 11 14 155 η Boötis 2·2 13 18 39 <td></td> <td>'</td> <td></td> <td></td> <td>4</td> <td></td> <td></td> <td>, -</td> <td></td> <td></td>		'			4			, -		
β Geminorum 1·2 6 20 37 α Hydræ 2·2 7 36 116 α Geminorum 2·0 6 34 24 γ Hydræ 3·3 9 18 134 ε Leonis 3·1 8 5 48 δ Crateris 3·8 9 43 130 γ¹ Leonis 2·6 8 29 57 γ Corvi 2·8 10 50 138 δ Leonis 2·6 9 26 56 δ Corvi 3·1 10 59 135 β Leonis 2·2 9 50 69 69 60 8 Corvi 3·1 10 59 135 β Leonis 2·2 9 50 69 69 6 7 Corvi 3·2 11 14 155 η Boötis 2·8 12 2 61 α Virginis 11·2 11 38 122 α Boötis 2·7 13 18 39 β Libræ 2·9 13 18 134 ρ Boötis 3·8 13 22 29 ζ Ophiuchi 2·7 14 49 121 α Coronæ Boreal 2·3 14 6 40 β¹ Scorpii								-		
α Geminorum 2.0 6 34 24 v Hydræ 3·3 9 18 134 ε Leonis 3·1 8 5 48 δ Crateris 3·8 9 43 130 γ¹ Leonis 2·6 8 29 57 γ Corvi 2·8 10 50 138 δ Leonis 2·6 9 26 56 δ Corvi 3·1 10 59 135 β Leonis 2·2 9 50 69 ε Corvi 3·2 11 14 155 η Boötis 2·2 9 50 69 ε Corvi 3·2 11 14 155 η Boötis 2·2 9 50 69 ε Corvi 3·2 11 14 155 η Boötis 2·2 9 50 69 ε Corvi 3·2 11 14 155 η Boötis 2·2 9 50 69 ε Corvi 3·2 11 14 155 η Boötis 2·2 9 50 69 ε Corvi 3·2 11 14 155 η Boötis 2·2 13 18 39 β Libræ 2·9 13 18 134 η Hercu			_							
E Leonis 3·1 8 5 48		مما								
γ¹ Leonis 2·6 8 29 57 γ Corvi 2·8 10 50 138 δ Leonis 2·6 9 26 56 δ Corvi 3·1 10 59 135 β Leonis 2·2 9 50 69 ε Corvi 3·2 11 14 155 η Boötis 2·2 9 50 69 ε Corvi 3·2 11 14 155 α Boötis 2·7 13 18 39 β Libræ 2·9 13 18 122 α Coronæ Boreal. 2·3 14 6 40 β¹Scorpii 2·7 14 49 121 α Coronæ Boreal. 2·3 14 6 40 β¹Scorpii 2·9 14 50 145 γ Herculis 3·8 14 30 60 8 Scorpii 2·5 15 55 156 β Herculis 3·2 15 39 46 γ Ophiuchi 2·6 15 38 134 γ Herculis 3·5 16 21 38	_ T									
δ Leonis 2.6 9 26 56 β Corvi 3.1 10 59 135 β Leonis 2.2 9 50 69 ε Corvi 3.2 11 14 155 η Boötis 2.8 12 2 61 α Virginis 1.2 11 38 122 α Boötis 2.7 13 18 39 β Libræ 2.9 13 18 134 ρ Boötis 3.8 13 22 29 ζ Ophiuchi 2.7 14 49 121 α Coronæ Boreal γ Herculis 3.8 14 30 60 δ Scorpii 2.9 14 50 δ Scorpii 2.9 14 50 δ Scorpii 2.5 15 5 156 14 44 54 η Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 2.6 γ Ophiuchi 2.6 γ Ophiuchi 2.6 γ Ophiuchi 2.6 γ Ophiuchi			1 -			~ .		-		
β Leonis 2.2 9 50 69	\$ Taonia					\$ Commi			_	
η Boötis 2.8 12 2 61 α Virginis 1.2 11 38 122 α Boötis 0.2 12 24 59 α Libræ 2.9 13 18 134 β Boötis 3.8 13 22 29 α Coronæ Boreal 2.3 14 6 40 β Libræ 2.7 14 49 121 α Coronæ Boreal 2.3 14 6 40 β Scorpii 2.5 15 5 145 γ Herculis 3.8 14 30 60 β Herculis 3.2 15 39 46 γ Ophiuchi 2.6 15 38 134 γ Ophiuchi 3.5 16 10 119 γ Ophiuchi 3.5 16 10 119 γ Ophiuchi 3.5 16 10 119 γ Ophiuchi 3.5 16 17 53 151 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuchi 3.8 18 37 127 γ Ophiuc	β Leonis	2.2			,5	- O:				
ε Boötis 2·7 13 18 39 β Libræ 2·7 13 27 118 ρ Boötis 3·8 13 22 29 ζ Ophiuchi 2·7 14 49 121 α Coronæ Boreal. 2·3 14 6 40 β¹Scorpii 2·9 14 50 145 γ Herculis 2·8 14 44 54 γ Ophiuchi 2·6 15 38 134 δ Herculis 3·2 15 39 46 γ Ophiuchi 2·6 15 38 134 δ Herculis 3·0 15 41 25 μ Sagittarii 3·6 17 9 151 ε Herculis 3·5 16 21 38 π Sagittarii 3·6 17 53 151 μ Herculis 3·5 16 21 38 π Sagittarii 3·6 17 53 151 μ Pegasi 3·2 18 5 38 α Aquarii 3·8 18 37 127 γ	η Boötis	2.8	I2 2	61		α Virginis		1.2	11 38	
ρ Boötis 3.8 13 22 29 ζ Ophiuchi 2.7 14 49 121 α Coronæ Boreal. 2.3 14 6 40 40 β¹ Scorpii 2.9 14 50 145 γ Herculis 3.8 14 30 60 δ Scorpii 2.5 15 5 156 5 β Herculis 3.2 15 39 46 γ Ophiuchi 2.6 15 38 134 δ Herculis 3.0 15 41 25 μ Sagittarii 4.0 17 9 151 ε Herculis 3.9 15 54 28 ξ Sagittarii 3.6 17 53 151 μ Herculis 3.5 16 21 38 π Sagittarii 3.0 18 5 151 β Cygni 3.2 18 5 38 α² Capricorni 3.8 18 37 127 ζ Cygni 3.4 19 58 32 β Capricorni 3.8 18 58 119 μ Pegasi 3.7 21 10 48 δ Capricorni 3.9 20 36 158 η Pegasi 3.5 22 2 2 46 <td< td=""><td></td><td>0.2</td><td>12 24</td><td>59</td><td></td><td></td><td>•••</td><td>2.9</td><td>13 18</td><td>134</td></td<>		0.2	12 24	59			•••	2.9	13 18	134
α Coronæ Boreal. 2·3 14 6 40 β¹ Scorpii 2·9 14 50 145 γ Herculis β¹ Herculis β¹ Herculis β² Herculis β² Herculis β² Is 39 46 γ Ophiuchi 2·6 15 38 134 δ Herculis β² Herculis β² Herculis β² Is 15 41 25 μ Sagittarii β² Is 17 9 151 ε Herculis β² Is 16 21 38 π Sagittarii β² Is 17 18 151 β Cygni β² Is 19 58 32 β Capricorni β² Is 18 132 γ Capricorni β² Is 18 132 ε Pegasi β² Pegasi β² Is 12 12 7 32 β Capricorni β² Is 136 γ Capricorni β² Is 136 γ Pegasi β² Is 12 12 7 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Pegasi β² Is 12 12 7 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Pegasi β² Is 12 12 7 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Aduarii β² Is 136 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ Capricorni β² Is 136 γ			13 18				٠	2.7	13 27	118
γ Herculis 3.8 14 30 60 δ Scorpii : 2.5 15 5 156 β Herculis 2.8 14 44 54 η Ophiuchi 2.6 15 38 134 δ Herculis 3.2 15 39 46 ν Ophiuchi 2.6 15 38 134 ζ Herculis 3.0 15 41 25 μ Sagittarii 4.0 17 9 151 ε Herculis 3.5 16 21 38 π Sagittarii 3.6 17 53 151 μ Herculis 3.5 16 21 38 π Sagittarii 3.0 18 5 151 β Cygni 3.2 18 5 38 α² Capricorni 3.8 18 37 127 ζ Cygni 3.4 19 58 32 β Capricorni 3.3 18 45 132 ι Pegasi 4.0 20 30 46 ε Aquarii 3.8 18 58 119 μ Pegasi 3.7 21 10 48 δ Capricorni 3.9 20 36 158 β Pegasi 2.2 22 24 6 36 δ Aquarii 3.8 22 29		1 -	1 - /		Ĭ		•••			
β Herculis	Tonoulia						•••			
δ Herculis 3·2 15 39 46 v Ophiuchi 3·5 16 10 119 ζ Herculis 3·0 15 41 25 μ Sagittarii 4·0 17 9 151 ε Herculis 3·5 16 21 38 π Sagittarii 3·6 17 53 151 μ Herculis 3·5 16 21 38 π Sagittarii 3·0 18 5 151 β Cygni 3·2 18 5 38 α² Capricorni 3·8 18 37 127 ζ Cygni 3·4 19 58 32 β Capricorni 3·8 18 45 132 μ Pegasi 4·0 20 30 46 ε Aquarii 3·8 18 58 119 μ Pegasi 3·7 21 10 48 δ Capricorni 3·0 20 18 136 η Pegasi 2·5 21 37 39 λ Aquarii 3·8 20 59 116	l o Transmitta		1	l .						
ζ Herculis 3·0 15 41 25 μ Sagittarii 4·0 17 9 151 ε Herculis 3·9 15 54 28 μ Sagittarii 3·6 17 53 151 μ Herculis 3·5 16 21 38 π Sagittarii 3·0 18 5 151 β Cygni 3·2 18 5 38 α² Capricorni 3·8 18 37 127 ζ Cygni 3·4 19 58 32 β Capricorni 3·3 18 45 132 μ Pegasi 4·0 20 30 46 ε Aquarii 3·8 18 58 119 μ Pegasi 3·7 21 10 48 δ Capricorni 3·0 20 18 136 η Pegasi 3·1 21 27 32 ζ Capricorni 3·9 20 36 158 β Pegasi 2·5 21 37 39 λ Aquarii 3·8 20 59 116	2 Horoulia	1		1 34						
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$, -			ì					-
$\begin{array}{ c c c c c c c c c c c c c c c c c c c$	- Honoulia	1 -	1							_
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$	Waranlia	1 - 1	1 5 -	38				_		_
ι Pegasi 4·0 20 30 46 ε Aquarii 3·8 18 58 119 μ Pegasi 3·7 21 10 48 δ Capricorni 3·0 20 18 136 η Pegasi 2·5 21 37 39 λ Aquarii 3·8 20 36 158 δ Andromedæ 2·2 22 46 36 δ Aquarii 3·5 21 24 135 δ Andromedæ 3·5 23 27 30 c² Aquarii 3·8 22 28 153 ι Ceti 3·8 22 29 118 β Ceti 2·2 23 23 142	β Cygni		18 5	38	1					_
Pegasi 3·7 21 10 48 δ Capricorni 3·0 20 18 136 γ Pegasi 2·5 21 37 39 λ Aquarii 3·8 20 59 116 δ Andromedæ 2·2 22 46 36 δ Aquarii 3·8 22 8 153 δ Andromedæ 3·5 23 27 30 Ceti 3·8 22 29 118 β Ceti 2·2 23 23 142	70	3.4	19 58	32			•••		12	
$ \begin{array}{ c c c c c c c c c c c c c c c c c c c$			_	46	ŀ					
β Pegasi 2·5 21 37 39		1							_	
δ Andromedæ 2·2 22 46 36 δ Aquarii 3·5 21 24 135 δ Andromedæ 3·5 23 27 30 c² Aquarii 3·8 22 8 153 ι Ceti 3·8 22 29 118 β Ceti 2·2 23 23 142	1 2	1 -			1					-
δ Andromedæ 3·5 23 27 30 c² Aquarii 3·8 22 8 153 ι Ceti 3·8 22 29 118 β Ceti 2·2 23 23 142		_		39	1			-	1	
ι Ceti 3·8 22 29 118 β Ceti 2·2 23 23 142					ĺ		•••	,		
β Ceti 2·2 23 23 142		' '	-3 -/	,			•••			
						β Ceti	•••	2.2		
					Ξ.	θ Ceti		3.8		
	-	[
				1		* 1				
			ľ					[_
	*					1				
					1					
	1									

LATITUDE 5º NORTH.

SW. QUADRANT

Star.	. Mag.	L. S.T.	Az.
c ² Aquarii δ Aquarii λ Aquarii β Ceti ι Ceti θ Ceti ζ Ceti	. 3.8	h. m. 0 2 0 16 0 37 1 55 2 1 3 7 3 30	207 225 245 218 242 243 238
ε Eridani δ Eridani γ Eridani ε Leporis β Leporis β Leporis μ Leporis α Leporis	3.8 3.7 3.2 3.3 4.0 3.3 2.7	5 14 5 23 5 28 5 51 6 6 6 28 6 35 6 48	241 240 231 203 229 210 225 220
β Orionis κ Orionis β Canis Majoris α Canis Majoris α Hydræ ν Hydræ δ Crateris ε Corvi	-1·6 2·2 3·3 3·8 3·2	6 59 7 29 7 38 8 6 11 12 12 14 12 47 12 58	244 241 220 224 244 226 230 205
γ Corvi δ Corvi α Virginis δ Scorpii β Libræ β Libræ β Libræ	. 2·8 . 3·1 . 1·2 . 2·9 . 2·5 . 2·7	13 34 13 53 15 4 16 14 16 45 16 59 17 12 18 17	222 225 238 226 204 242 215 239
γ Ophiuchi η Ophiuchi μ Sagittarii ν Ophiuchi ξ Sagittarii π Sagittarii β Capricorni α Capricorni	. 3.8	18 17 18 34 19 9 19 40 19 53 20 5 21 47 21 51	226 209 241 209 209 228 233
ζ Capricorni ε Aquarii δ Capricorni	3.9 3.8 3.0	22 8 22 28 23 8	202 240 224
	* -		

Star.	Mng.	L. S.T.	Az.
		h. m.	•
μ·Pegasi	3.7	0 22	312
β Pegasi	2.5	0 23	321
α Andromedæ	2.2	I 22	324
δ Andromedæ	3.2	I 43	330
β Arietis	2.7	3 36	303
α Arietis	2.2	3 42	309
ζ Persei	2.9	4 48	334
17 Tauri	3⋅8	5 17	311
η Tauri	3.0	5 20	311
ε Tauri	3.6	6 13	299
α Tauri	1.1	6 24	294
β Tauri	1.8	6 39	324
ζ Tauri	3.0	7 17	305
μ Geminorum	3.2	7 59	308
ε Geminorum	3.5	8 11	315
α Geminorum	2.0	8 24	336
γ Geminorum	1.9	8 26	295
δ Geminorum	3.2	8 57	307
β Geminorum	1.2	9 0	323
ε Leonis	3.1	11 17	312
γ¹ Leonis	2.6	12 I	303
δ Leonis	2.6	12 54	304
β Leonis	2.2	13 40	291
ρ Boötis	3.8	15 34	331
η Boötis	2.8	15 40	299
α Boötis	0.5	16 0	30I
ε Boötis	2.7	16 4	321
α Coronæ Boreal.	2.3	16 56	320
ζ Herculis	3.0	17 35	335
ε Herculis	3.9	18 0 18 6	332
γ Herculis	3.8		300
β Herculis	2.8		306 314
δ Herculis μ Herculis	3.2	10	322
	3.5	19 5 20 49	322
β Cygni ζ Cygni	3·2	22 20	328
ζ Cygni ι Pegasi	4.0	23 36	314
η Pegasi	3·I	23 51	328
d regari	J *	~5 J^	ا
, l			
		*	
*		2	

NE. QUADRANT SE. QUADRANT

ζ Ceti 3·9 0 2 120 ε Eridani 3·8 1 42 117 δ Eridani 3·7 1 52 118 γ Eridani 3·2 2 17 127 53 Eridani 4·0 2 58 128 β Orionis 3·3 3 40 133 α Orionis 2·2 3 57 117 μ Leporis 3·3 3 40 133 α Orionis 2·2 3 57 117 ε Leporis 3·3 4 4 152 α Leporis 2·7 4 6 137 β Laporis 2·7 4 6 137 β Laporis 2·0 4 56 137 α Canis Majoris 2·0 4 56 137 α Canis Majoris 2·0 4 56 137 α Cari	Star.	Mag.	L. S.T.	Az.
0 Ceti 3.8 23 31 115	Eridani δ Eridani γ Eridani β Orionis μ Leporis κ Orionis κ Coronis β Leporis β Canis Majoris α Canis Majoris α Canis Majoris α Canis Majoris α Hydræ γ Corvi δ Corvi δ Corvi κ Corvi γ Corvi κ Corvi γ Corvi γ Corvi κ Corvi γ Corvi κ Corvi γ Corvi γ Corvi κ Capricorni κ Capricorni κ Capricorni κ Capricorni κ Aquarii κ Aquarii κ Aquarii κ Capricorni κ Aquarii κ Capricorni κ Aquarii κ Capricorni κ Aquarii κ Capricorni κ Aquarii κ Capricorni κ Aquarii κ Capricorni κ Aquarii κ Aquarii κ Ceti κ Ceti κ Ceti κ Ceti κ Ceti κ Ceti κ Ceti	3.8 3.7 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	0 42 1 52 2 17 2 58 3 40 3 57 4 6 5 5 34 4 56 5 5 14 6 5 34 11 35 12 17 13 14 13 25 14 45 15 34 16 17 58 17 46 17 58 18 42 17 58 18 42 18 56	120 117 118 127 128 114 133 117 152 137 146 137 134 114 131 128 135 132 151 154 120 153 131 116 142 119 152 131 117 147 147 147 147 147 147 14

1			 _
Star.	Mag.	L.S.T.	Az.
		h. m.	0
c ² Aquarii	3.8	0 9	211
δ Aquarii	3.2	0 20	227
β Ceti	2.2	2 0	22 I
ı Ceti	3.8	2 3	244
θ Ceti	3.8	3 9	245
ζ Ceti	3.9	3 32	240
ε Eridani	3⋅8	5 16	243
δ Eridani	3.7	5 26	242
γ Eridani	3.5	5 32 6 0	233
ε Leporis	3.3	6 0	208
53 Eridani	4.0	6 10	232
β Leporis	3.0	6 35	214
μ Leporis	3.3	6 38	227
α Leporis	2.7	6 52	223
β Orionis	0.3	7 1	246
х Orionis	2.2	7 31	243
β Canis Majoris	2.0	7 42	223
α Canis Majoris	-1.6	8 10 11 14	226
$\alpha Hydra \dots \dots$	2.2		246
ν Hydræ δ Crateris	3.3	12 18	229
~ :	3.8	12 51	232
ε Corvi β Corvi	3·2 2·8	13 7 13 26	206
٠ ^ •	2.8	, ,	225
γ Corvi δ Corvi	3.1	,	228
	3.3	13 57 14 11	207
γ Hydræ α Virginis	1·2	15 7	240
α Libræ	2.9	16 18	229
δ Scorpii	2.5	16 54	208
β Libræ	2.7	17 I	244
β¹ Scorpii	2.9	17 17	218
ζ Ophiuchi	2.7	18 19	241
η Ophiuchi	2.6	18 38	229
μ Sagittarii	4.0	19 16	213
ν Ophiuchi	3.2	19 42	243
ξ Sagittarii	3.6	20 0	212
π Sagittarii	3.0	20 12	213
β Capricorni	3.3	21 50	230
α ² Capricorni	3.8	21 54	236
ζ Capricorni	3.9	22 17	206
ε Aquarii	3.8	22 30	243
δ Capricorni	3.0	23 12	227
			l
			l
		-	
		I	

		1	1
Star.	Mag.	L.S.T.	Az.
·		h. m.	0
β Pegasi	2.5	0 17	324
μ Pegasi	3.7	0 18	314
α Andromedæ	2.2	1 16	327
δ Andromedæ	3.2	I 35	333
β Arietis	2.7	3 33	305
α Arietis	2.2	3 38	312
17 Tauri	3.8	5 13 5 16	313
η Tauri Υ Tauri	3·9	5 16 6 7	313 294
γ <i>Tauri</i> ε Tauri	3.6	6 11	301
α Tauri	1.1	6 22	296
β Tauri	1.8	6 34	327
ζ Tauri	3.0	7 14	307
μ Geminorum	3.2	7 55	310
ε Geminorum	3.2	8 7	317
γ Geminorum	1.9	8 24	296
δ Geminorum	3.5	8 53	309
β Geminorum	1.2	8 54	326
ε Leonis	3.1	11 13	314
γ¹ Leonis	2.6	11 58	305
δ Leonis	2.6	12 51	307
0 Leonis	3.4	13 2	395
β Leonis	2.2	13 38	293
ρ Boötis	3.8	15 26	334
η Boötis	2.8	15 38	301
α Boötis	0.2	15 57	303
ε Boötis	2.7	15 59 16 51	323
α Coronæ Boreal. γ Serpentis	2.3		322
γ Serpentis ε Herculis	3·9 3·9	17 45 17 53	295 336
γ Herculis	3.8	18 4	302
β Herculis	2.8	18 7	308
δ Herculis	3.2	18 41	316
μ Herculis	3.2	19 0	324
β Cygni	3.5	20 44	324
ζ Cygni	3·4 3·9	22 13	331
α Delphini	3.9	22 28	294
ι Pegasi	4.0	23 32	316
η Pegasi	3.1	23 44	331
	1		
	:		
		1,	

Star. Mag. L.S.T. Az. h. m. β Arietis ... 0 9 2.7 53 α Arietis ... 2.5 0 31 46 17 Tauri 3.8 2 IO 45 Tauri 2 13 3.0 45 Tauri 2 24 64 3.9 57 62 Tauri 3.6 2 39 Tauri I • I 2 42 Tauri 3.0 51 3 55 B Tauri 1.8 30 4 14 μ Geminorum ... 3.2 4 44 47 Geminorum ... 1.9 62 4 44 ε Geminorum ... 3.2 5 15 40 5 40 6 32 δ Geminorum ... 3.2 49 β Geminorum ... I · 2 31 8 13 ε Leonis ... 3.1 43 8.35 2.6 γ¹ Leonis ... 53 63 θ Leonis ... 9 20 3.4 δ Leonis ... 2.6 51 65 9 32 Leonis ... 2.2 9 53 n Boötis ... 2.8 12 6 57 α Boötis ... 0.2 12 29 55 ε Boötis ... 13 28 34 63 2.7 γ Serpentis 3.9 14 3 α Coronæ Boreal. 14 16 2.3 35 56 Herculis 3.8 14 34 β Herculis 2.8 14 50 50 a Herculis 3.5 15 18 66 Herculis 15 46 3.5 4I μ Herculis 16 32 3.2 33 18 16 β Cygni 33 64 3.2 α Delphini 18 45 3.9 ζ Cygni ... 20 I2 3.4 25 Pegasi ... 4.0 20 38 42 α Pegasi ... 2.6 65 2 I 9 μ Pegasi 21 18 3.7 43 Pegasi 21 41 3.1 26 β Pegasi ... 2.5 21 48 33 65 γ Pegasi ... 2.9 22 17 30 α Andromedæ ... 2.2 22 58 65 23 23 35 23 43 3·7 3·5 Piscium... Andromedæ ...

Star.	Mag.	L.S.T.	Az.
		h. m.	0
ζ Ceti	3.9	0 0	118
ε Eridani	3.8	1 40	115
δ Eridani	3.7	1 50	116
γ Eridani	3.2	2 14	125
53 Eridani	4.0	2 55	126
μ Leporis	3.3	3 36	131
ж Orionis	2.2	3 54	115
ε Leporis	3.3	3 57	149
α Leporis	2.7	4 I	135
β Leporis β Canis Majoris	3.0	4 9	143
β Canis Majoris α Canis Majoris	2·0 -1·6	4 51 5 10	135
o ² Canis Majoris	3.1	5 10 6 3	131
ρ Argus	2.9	7 11	153 155
α Hydræ	2.2	7 32	112
ν Hydræ	3.3	9 11	129
δ Crateris	3.8	9 36	126
γ Corvi	2.8	10 41	133
γ Corvi δ Corvi	3.1	10 52	130
ε Corvi	3.2	10 59	148
β Corvi	2.8	II 27	150
α Virginis	1.5	11 33	118
γ Hydræ	3.3	12 10	149
α Libræ β <i>Libræ</i>	2.9	13 11	129
01 0:	2.7	13 22	114
γ O-hih:	2.7	14 40 14 45	139
δ Scorpii	2.5	I4 45 I4 49	117
η Ophiuchi	2.6	15 30	129
v Ophiuchi	3.2	16 6	115
μ Sagittarii	4.0	16 56	144
ξ Sagittarii	3.6	17 41	145
π Sagittarii	3.0	17 52	144
α ² Capricorni	3.8	18 31	122
β Capricorni	3.3	18 39	128
ε Aquarii	3.8	18 54	115
δ Capricorni	3.0	20 11	131
ζ Capricorni	3.9	20 19	150
δ Aquarii c² Aquarii	3.5	21 17	131
ı Ceti	3·8 3·8	21 55 22 25	146 <i>114</i>
β Ceti	2.2	23 13	136
	_ ~	כי ני	- 50
		_	
7			
		, l	
14.			
		<u> </u>	

				7
Star.	Mag.	L.S.T.	Az.	
		h. m.	0	l
c² Aquarii	3.8	0 15	214	l
δ Aquarii	3.2	0 23	229	
ı Celi	3.8	2 5	246	1
. β Ceti	2.2	2 5	224	
θ <i>Ceti</i> ζ Ceti	3.8	3 11	247	
ε Eridani	3·8	3 34 5 18	242 245	
δ Eridani	3.7	5 18 5 28	244	
γ Eridani	3.2		235	
ε Leporis	3.3	5 35 6 7	211	
53 Eridani	4.0	6 13	234	
β Leporis	3.0	6 4 r	217	
μ Leporis	3.3	6 42	229	
α Leporis	2.7	6 57	225	
κ Orionis	2.2	7 34	245	
β Canis Majoris	2.0	7 47	225	
o ² Canis Majoris α Canis Majoris	-1·6	7 57 8 14	207	
α Canis Majoris ρ Argus	2.9	8 14 8 57	229 205	
α Hydras	2.2	11 16	248	
ν Hydræ	3.3	I2 2I	23I	
δ Crateris	3.8	12 54	234	
ε Corvi	3.2	13 13	212	
β Corvi	2.8	13 33	210	ł
γ Corvi δ Corvi	2.8	13 43	227	
	3.1	14 0	230	
γ Hydræ	3.3	14 18	211	
α Virginis α Libræ	1.2	15 9 16 21	242	
α Libræ δ Scorpii	2·9 2·5	17 1	23I 2I2	
β Libræ	2.7	17 4	246	
β¹ Scorpii	2.9	17 22	22 I	
ζ Ophiuchi	2.7	18 21	243	
η Ophiuchi	2.6	18 42	231	
μ Sagittarii	4.0	19 22	216	
ν Ophiuchi		19 44	245	
ξ Sagittarii		20 5	215	
π Sagittarii	3.0	20 18	216	
β Capricorni α ² Capricorni	3·8	21 53 21 57	238	
ζ Capricorni	3.9	22 25	210	
ε Aquarii	3.8	22 32	245	
δ Capricorni	3.0	23 15	229	
_				
		_		
			or .	
<u> </u>	<u> </u>)

Star.	Mag.	L.S.T.	Az.
		h. m.	0
β Pegasi	2.5	0 12	327
	2.7	0 14	
μ Pegasi α Pegasi	2.6		317
, , ,	2.2	0 53 I IO	295
δ Andromedæ	3.5	1 27	330 337
	2.9	2 I	295
T	3.7	3 19	295
η Piscium β Arietis	2.7		307
α Arietis	2.2		314
	3.8	3 35 5 10	
' — ·	3.0		315
'm .		5 I3 6 6	315
' i	3.9	_	296
	3.6	6 9 6 20	303
α Tauri	1·8	6 28	298
β Tauri ζ Tauri			330
	3.0	,	309
μ Geminorum	3.2	7 52	313
ε Geminorum	3.2	8 3	320
γ Geminorum	1.9	8 22	298
β Geminorum	I·2	8 48	329
δ Geminorum	3.2	8 50	311
ε Leonis	3·I	11 9	317
γ¹ Leonis	2.6	II 55	307
& Leonis	2.6	12 48	309
θ Leonis	3.4	13 0	297
β Leonis	2.2	13 37	295
η Boötis	2.8	15 36	303
ε Boötis	2.7	15 54	326
α Boötis	0.2	15 55	305
α Coronæ Boreal.	2.3	16 46	325
γ Serpentis	3.9	17 43	297
γ Herculis	3.8	18 2	304
β Herculis	2.8	18 4	310
δ Herculis	3.2	18 38	319
μ Herculis	3.2	18 54	327
α Herculis	3.5	19 4	294
β Cygni	3.2	20 38	327
ζ Cygni	3.4	22 6	335
α Delphini	3.9	22 27	296
ι Pegasi	4.0	23 28	318
η Pegasi	3.1	23 37	334
	,	-	
l			
l			
l			1
	1		120

				
Star.	Mag.	L.S.T.	Az.	
	i	h. m.	0	
c ² Aquarii	3.8	0 21	217	
δ Aquarii	3.2	0 27	232	
β Ceti	2.2	2 9	226	
0 Ceti	3.8	3 13	249	
ζ Ceti	3.9	3 36	244	
ε Eridani	1 0 0	5 20	247	
δ Eridani	3.7	5 30	246	
γ Eridani	1 -	5 37	238	
ε Leporis	3.3	6 14	214	
53 Eridani	4.0	6 15	236	
μ Leporis	3.3	6 46	232	
β Leporis	3.0	6 46	220	
α Leporis	2.7	7 I	228	
β Canis Majoris	2.0	7 51	228	
o ² Canis Majoris	3.1	8 5	211	
α Canis Majoris	–1.6	8 18	231	
ξ Argus	3.5	8 44	207	
ρ Argus		9 6	209	
$\alpha Hydra \dots \dots$	2.2	11 17	250	
v Hydræ	3.3	12 24	233	
δ Crateris	3.8	12 57	236	
ε Corvi	ە م	13 19	215	
β Corvi		13 40	213	
γ Corvi δ Corvi	1	13 46	230 232	
	1 -	14 3	214	
γ Hydræ α Virginis	3.3	14 25 15 11	244	
~ ~	3.4	15 54	206	
T:1	2.9	16 24	233	
Q:	3.1	17 6	203	
δ Scorpii	0.5	17 7	215	
β¹ Scorpii	ا م.م	17 26	223	
θ Ophiuchi		18 13	206	
ζ Ophiuchi		18 23	245	
η Ophiuchi		18 45	233	
μ Sagittarii	1.0	19 27	219	
ξ Sagittarii	1 6.6	20 11	218	
π Sagittarii	3.0	20 23	219	
β Capricorni	3.3	21 56	235	
α ² Capricorni	3.8	21 59	240	
ζ Capricorni	3.9	22 31	213	
δ Capricorni	3.0	23 19	231	

Star.	Mag.	L.S.T.	Az.
		h. m.	0
β Pegasi	2.5	0 5	330
μ Pegasi	3.7	0 9	319
α Pegasi	2.6	0 51	297
α Andromedæ	2.2	I 2	334
γ Pegasi	2.9	1 59	296
η Piscium	3.7	3 17	297
β Arietis	2.7	3 27	309
α Arietis	2.2	3 31	316
17 Tauri	3∙8	5 6	318
η Tauri	3.0	5 9 6 4	318
γ Tauri	3.9		298
ε Tauri	3.6	6 6	306
α Tauri	1.1	6 18	300
β Tauri	i.8	6 20	333
ζ Tauri	3.0	7 8	311
μ Geminorum	3.5	7 48	315
ε Geminorum	3.5	7 58	322
γ Geminorum	1.9	8 20	300
β Geminorum	I·2	8 41	332
δ Geminorum	3.2	8 47	314
ε Leonis	3.1	11 5	319
γ¹ Leonis	2.6	11 52	309
δ Leonis	2.6	12 45	311
0 Leonis	3.4	12 58	299
β Leonis	2.8	13 35	297 306
η Boötis ε Boötis		15 33	_
D	2.7	15 48 15 52	329 307
α Bootis α Coronæ Boreal.	2.3	15 52 16 40	328
γ Serpentis	3.9	17 41	299
γ Herculis	3.8	17 59	307
β Herculis	2.8	18 0	313
δ Herculis	3.2	18 33	321
μ Herculis	3.2	18 47	331
α Herculis	3.5	19 2	296
β Cygni	3.2	20 31	331
ζ Aquilæ	3.0	20 54	294
α Delphini	3.9	22 25	298
ι Pegasi	4.0	23 24	321
T			
		=	
			_
			

Mag. L. S.T. Star. Az. 0 h. m. β Arietis ... 2.7 0 17 48 α Arietis ... 2.2 0 39 4I 17 Tauri 2 19 3.8 39 Tauri 2 22 39 60 3.0 Tauri 2 28 3.9 ••• α Tauri 58 I • I 2 46 ••• ε Tauri 3.6 2 46 52 ζ Tauri 4 2 3.0 47 4 30 23 1.8 β Tauri ... Y Geminorum ... 58 1.9 4 49 65 E Geminorum ... 3.4 4 50 μ Geminorum ... 3.2 4 52 43 ε Geminorum ... 5 26 3.2 35 δ Geminorum ... 3.2 5 47 6 47 44 24 1.2 B Geminorum ... 8 22 ε Leonis ... 3·1 38 8 41 γ¹ Leonis ... 2.6 49 θ Leonis ... 9 24 3.4 59 Leonis ... 2.6 9 38 47 β Leonis ... 2.2 9 58 61 n Boötis ... 2.8 12 13 52 α Boötis ... 0.2 12 36 50 ε Boötis ... 2.7 13 42 27 γ Serpentis 7 3.9 14 59 a Coronæ Boreal. 2.3 14 29 29 Herculis 3.8 14 41 51 β Herculis 2.8 14 58 45 α Herculis 3·5 2·1 15 22 62 a Ophiuchi 15 39 66 δ Herculis 3.2 15 57 36 16 47 μ Herculis 25 3.2 Aquilæ ... 64 3.0 17 12 β Cygni 18 31 3.2 25 α Delphini 18 49 60 3.9 36 ι Pegasi ... 20 48 4.0 α Pegasi ... 61 2.6 2I I3 μ Pegasi ... 3.7 21 28 38 β Pegasi ... 22 26 2.2 3 22 21 62 Pegasi ... 2.9 6r Piscium 23 39 3.7

Star.	Mag.	L. S.T.	Az.	
E Eridani γ Eridani μ Leporis ε Leporis β Leporis β Canis Majoris α Canis Majoris α Canis Majoris δ Canis Majoris δ Canis Majoris ξ Argus ρ Argus γ Argus γ Corvi δ Corvi γ Corvi γ Corvi γ Corvi γ Corvi γ Corvi γ Scorpii γ Scorpii γ Scorpii π Hydræ γ Scorpii π Sagittarii κ Sagittarii κ Sagittarii κ Sagittarii κ Sagittarii κ Sagittarii κ Capricorni β Capricorni β Capricorni β Ceti β Ceti γ Ceti γ Ceti	3.8 2.0 3.3 7.0 0.6 1.0 5.9 2.3 3.2 3.3 2.5 4.0 9.6 0.1 8.3 0.9 5.8 2.3 3.2 3.3 2.3 3.2 3.3 2.4 2.3 3.2 3.3 3.3 3.3 3.3 3.3 3.3 3.3 3.3	h. m. 1 36 2 2 50 3 3 54 4 4 5 5 6 6 6 7 9 3 3 5 6 6 6 7 9 9 3 5 5 6 6 6 7 9 9 3 5 5 6 6 6 7 9 9 3 5 5 6 6 6 7 9 9 3 5 6 6 6 7 9 9 3 5 6 6 6 7 9 9 3 5 6 6 6 7 9 9 3 5 6 6 6 7 9 9 3 5 6 6 6 7 9 9 3 5 6 6 6 7 9 9 3 5 6 6 6 7 9 9 3 5 6 6 6 7 9 9 3 5 6 6 6 7 9 9 3 5 6 6 6 7 9 9 9 7 10 10 10 10 10 10 10 10 10 10 10 10 10	111 120 122 126 143 130 138 130 146 156 149 148 108 125 142 144 143 125 156 151 134 142 154 155 150 139 151 151 152 153 153 153 153 153 153 153 154 155 150 151 151 152 153 154 155 155 155 155 155 155 155	

Star.	Mag.	L. S.T.	Az.
		h. m.	•
c ² Aquarii	3.8	0 26	220
δ Aquarii	3.2	0 30	234
β Ceti	2.2	2 12	229
θ Ceti	3⋅8	3 14	251
ζ Ceti	3.9	3 38	246
ε Eridani	3⋅8	5 22	249
γ Eridani	3.2	5 40 6 18	240
53 Eridani	4.0	_	238
ε Leporis μ Leporis	3.3	6 19 6 49	
μ Leporis β Leporis	3·3	6 49	234
α Leporis	2.7	7 4	230
β Canis Majoris	2.0	7 54	230
δ Canis Majoris	2.0	7 57	204
o ² Canis Majoris	3.1	8 11	214
α Canis Majoris	-1.6	8 21	233
ξ Argus	3.2	8 51	211
ρ Argus	2.9	9 12	212
α Hydræ	2.2	11 19	252
v Hydræ	3.3	12 27	235
δ Crateris	3.8	12 59	238
ε Corvi	3.5	13 24	218
β Corvi	2·8 2·8	13 45 13 49	232
γ Corvi δ Corvi	3.1	13 49	235
γ Hydræ	3.3	14 30	217
$\pi Hydras \dots \dots$	3.5	14 54	204
γ Scorpii	3.4	16 I	209
α Libræ	2.9	16 27	235
π Scorpii	3·ó	16 50	206
δ Scorpii	2.5	17 13	218
σ Scorpii	3.1	17 15	208
a Scorpii	1.2	17 17	204
β¹Scorpii	2.9	17 30	226
θ Ophiuchi	3·4 2·6	18 20 18 48	210
η Ophiuchi		10 40	207
λ Sagittarii μ Sagittarii	2·9 4·0	19 21	221
μ Sagittarii σ Sagittarii	2.1	19 41	203
ξ Sagittarii	3.6	20 16	22 I
π Sagittarii	3.0	20 28	22I
β Capricorni	3.3	21 59	237
α ² Capricorni	3.8	22 I	242
ζ Capricorni	3.9	22 37	216
δ Capricorni	3.0	23 22	233
			

Star.	Mag.	L. S.T.	Az.
Star.	mag.	1.5.1.	Az.
		h. m.	•
μ Pegasi	3.7	0 4	322
α Pegasi	2.6	0 49	299
γ Pegasi	2.9	1 57	298
η Piscium	3.7	3 15	299
β Arietis	2.7	3 23	312
α Arietis	2.2	3 27	319
17 Tauri	3.8	5 I	321
η Tauri	3.0	5 4	321
ε Tauri	3.6	6 2	308
γ Tauri	3.9	6 2	300
β Tauri	1.8	6 12	337
α Tauri	1.1	6 16	302
ζ Tauri	3.0	7 4	313
μ Geminorum ε Geminorum	3.2	7 44	317
		7 52 8 17	325
γ Geminorum ξ Geminorum	1·9 3·4	8 32	302 295
	1·2	8 33	336
β Geminorum δ Geminorum	3.2	8 43	316
ε Leonis	3.1	10 59	322
γ¹ Leonis	2.6	11 49	311
δ Leonis	2.6	12 42	313
θ Leonis	3.4	12 56	301
β Leonis	2.2	13 32	299
η Boötis	2.8	15 29	308
ε Boötis	2.7	15 40	333
α Boötis	0.5	15 48	310
α Coronæ Boreal.	2.3	16 33	331
γ Serpentis	3.9	17 39	301
γ Herculis	3.8	17 55	309
β Herculis δ Herculis	2.8	17 56	315
	3.5	18 27	324
μ Herculis	3.2	18 39	335
α Herculis α Ophiuchi	3:5 2·1	19 0 <i>19 23</i>	298 294
	3.5	20 23	335
β Cygni ζ Aquilæ	3.0	20 52	296
α Delphini	3.9	22 23	300
Pegasi	4.0	23 18	324
β Pegasi	2.5	23 57	334
1. = 10	ا ر	٠, ر	224
			l
		i	.,
	Į.		

NE. QUADRANT

Star. L. S. T. Mag. Az. h. m. 0 β Arietis ... 2.7 0 20 46 α Arietis ... 0 44 38 2.2 36 Tauri 3.8 2 25 Tauri 36 3.0 2 28 Tauri 2 31 3.9 58 α Tauri 56 2 49 $I \cdot I$ ε Tauri 3.6 2 50 50 7 Tauri 3.0 6 4 44 γ Geminorum ... 1.9 4 51 56 ξ Geminorum ... 63 3.4 4 52 μ Geminorum ... 3.2 40 4 57 ε Geminorum ... 3.2 5 32 32 δ Geminorum ... 5 52 8 14 3.2 41 α Leonis ... 65 1.3 ε Leonis ... 8 28 35 46 3.1 γ¹ Leonis ... 2.6 8 45 0 Leonis ... 3.4 9 27 57 δ Leonis ... 2.6 9 42 44 β Leonis ... 2.2 10 0 59 n Boötis ... 2.8 12 16 50 α Boötis ... 12 40 0.2 48 γ Serpentis 3.9 14 10 57 a Coronæ Boreal. 2.3 14 36 25 γ Herculis 3.8 14 45 49 β Herculis 2.8 15 42 α Herculis 3.2 15 24 60 a Ophinchi 2 · I 15 41 64 δ Herculis 16 3.2 3 33 ζ Aquilæ ... 3.0 17 14 62 α Delphini 18 52 3.9 58 L Pegasi ... 20 54 4.0 33 α Pegasi ... 2.6 21 15 59 μ Pegasi ... 35 60 21 33 3.7 Pegasi ... Υ 2.9 22 23 Piscium... 3.7 23 41 59

SE. QUADRANT

Star.	Mag.	L. S. T.	Az.
		h. m.	0
ε Eridani	<i>3</i> ·8	1 35	110
γ Eridani	3.2	2 6	118
53 Eridani	4.0	2 47	120
μ Leporis	3.3	3 27	124
ε Leporis	3.3	3 40	140
α Leporis	2.7	3 51	128
β Leporis	3.0	3 57	135
β Canis Majoris.	2.0	4 4 I	128
α Canis Majoris.	-1.6	5 0	125
o ² Canis Majoris.	3.1	5 44	143
δ Canis Majoris.	2.0	6 4	152
ξ Argus	3.5	6 35 6 50	146
ρ Argus α Hydræ	2.2	6 50 7 28	145
TT1	3.3		107
δ Crateris	3.8	9 3 9 28	123 120
γ Corvi	2.8	10 32	126
ε Corvi	3.2	10 43	139
δ Corvi	3·I	10 43	123
β Corvi	2.8	II IO	141
γ Hydræ	3.3	11 53	140
π Hydræ	3.2	13 I	152
α Libræ	2.9	13 2	123
γ Scorpii	3.4	13 50	148
β¹ Scorpii	2.9	14 28	132
δ Scorpii	2.5	14 32	139
π Scorpii	3.0	14 51	151
σ Scorpii	3·1	15 10	149
η Ophiuchi	2.6	15 22	I 2 2
α Scorpii	1.5	15 23	152
0 Ophiuchi	3.4	16 7	147
μ Sagittarii	4.0	16 41	136
λ Sagittarii ξ Sagittarii	2.9	17 18	149
Ca_:**=::	3.6	17 26	136
- O:++::	3·3	17 38	136
- C:44::	2·I	17 47 17 50	155 153
σ nagittarii α ² Capricorni	3.8	18 25	116
	3.3	18 30	121
δ Capricorni	3.0	20 I	125
ζ Capricorni	3.9	20 2	141
δ Aquarii	3.5	21 7	124
c ² Aquarii	3.8	21 39	137
β Ceti ζ <i>Ceti</i>	2.2	23 2	129
ζ Ceti	3 ∙9	23 54	112

Star. Mag. L. S.T. Az. h. m. c2 Aquarii ... 3.8 0 31 223 δ Aquarii ... 236 3.2 0 33 2 16 β Ceti 231 2.2 253 Ceti 3.8 3 16 Eridani ... 5 23 250 3.8 γ Eridani ... 5 42 6 21 3.2 242 53 Eridani ... 240 4.0 6 24 ε Leporis ... 3.3 220 μ Leporis ... 6 51 236 3.3 β Leporis ... 6 53 225 3.0 α Leporis ... 2.7 232 7 7 β Canis Majoris 2.0 232 57 6 δ Canis Majoris 2.0 208 8 16 o² Canis Majoris 3·I 217 α Canis Majoris -1.6 8 24 235 8 57 ξ Argus 3.5 214 18 ρ Argus 215 2.9 9 2.2 11 20 253 a Hydræ ... v Hydræ ... 12 29 237 3.3 δ Crateris... 13 240 3.8 ε Corvi 3.2 13 29 22 I β Corvi 2.8 13 50 219 γ Corvi 2.8 234 13 52 Corvi 3.1 14 9 237 γ Hydræ ... 220 14 35 3.3 208 π Hydræ ... 3 8 3.2 15 16 γ Scorpii ... 212 3.4 16 30 α Libræ 237 2.9 16 57 π Scorpii ... 3.0 209 8 Scorpii ... 17 18 22 I 2.5 σ Scorpii ... 17 22 2 I I 3.I 208 α Scorpii ... 1.2 17 25 β¹ Scorpii ... 228 17 34 2.9 θ Ophiuchi 18 27 213 3.4 η Ophiuchi 18 50 238 2.6 λ Sagittarii 19 28 2 I I 2.9 205 φ Sagittarii 3.3 19 35 224 μ Sagittarii 19 37 4.0 σ Sagittarii 19 50 207 2 · I ξ Sagittarii 3.6 20 20 224 224 π Sagittarii 3.0 20 32 22 2 239 β Capricorni 3.3 22 3 α² Capricorni 3.8 244 ζ Capricorni 3.9 22 42 219 δ Capricorni 3.0 23 25 235

Star.	Mag.	L. S.T.	Az.
	1	h. m.	0
α Pegasi	2.6	0 47	301
γ Pegasi	2.9	I 55	300
n Piscium	3.7	3 13	301
β Arietis	2.7	3 20	314
α Arietis	2.2	3 22	322
17 Tauri	3⋅8	4 55	324
η Tauri	3.0.	4 58	324
ε Tauri	3.6	5 58	310
γ Tauri	3.9	5 59	302
α Tauri	I.I	6 13	304
ζ Tauri	3.0	7 0	316
μ Geminorum	3.2	7 39	320
ε Geminorum	3.2	7 46	328
γ Geminorum	1.9	8 15	304
ξ Geminorum	3.4	8 30	297
δ Geminorum	3.2	8 38	319
ε Leonis	3.1	10 54	325
γ^1 Leonis	2.6	11 45	314
α Leonis	1.3	11 54	295
δ Leonis	2.6	12 38	316
0 Leonis	3.4	12 53	303
β Leonis	2.2	13 30	301
η Boötis	2.8	15 26	310
α Boötis	0.2	15 44	312
α Coronæ Boreal.	2.3	16 26	335
γ Serpentis γ Herculis	3.9	17 36	303
	3.8	17 51	311
'0 TT1'	3.2	17 52	318
TT 1*	-	18 58	327 300
0.11.11	3.2	19 21	296
ζ Aquilæ	3.0	20 50	298
α Delphini	3.9	22 20	302
L Pegasi	4.0	23 12	327
μ Pegasi	3.7	23 59	325
μ. 1 og ασι ··· ···	' '	-5 55	3-3
	0	1	
		1	
		1	
		*	
	1		1
		1	
		1	
<u> </u>		1	1

Star.	Mag.	L. S.T.	Az.
		h. m.	0
δ Aquarii	3.2	0 35	238
c2 Aquarii	3.8	0 35	225
β Ceti	2.2	2 19	233
ε Eridani	3⋅8	5 24	252
γ Eridani	3.5	5 44	243
53 Eridani	4.0	6 23	242
ε, Leporis	3.3	6 29	223
μ Leporis	3.3		238
β Leporis α Leporis	3.0	6 57 7 10	227 234
α Leporis 22 Canis Majoris	2·7 3·7	7 54	206
β Canis Majoris	2.0	8 0	234
δ Canis Majoris	2.0	8 13	211
o ² Canis Majoris	3.1	8 21	219
α Canis Majoris	_ i ∙6	· 8 26	237
ξ Argus	3.2	9 3	217
ρ Argus	2.9	9 2 3	218
a Hydra	2.2	11 21	255
ν Hydræ	3.3	12 31	239
δ Crateris	3.8	13 4	242
ε Corvi	3.2	13 34	224
γ Corvi	2.8	13 55	236
β Corvi δ Corvi	2.8	13 55	222
	3.3	14 11	239
γ Hydræ π Hydræ	3.2	15 10	211
γ Scorpii	3.4	16 14	215
α Libræ	2.9	16 32	239
π Scorpii	3·ó	17 4	213
δ Scorpii	2.5	17 22	223
τ Scorpii	2.9	17 26	205
σ Scorpii	3.1	17 28	214
α Scorpii	I·2	17 32	212
β¹ Scorpii	2.9	17 38	230
θ Ophiuchi	3.4	18 33	216
η Ophiuchi λ Sagittarii	2.6	18 52 19 35	239 214
A ***** **	4.0	19 41	227
	3.3	19 43	208
φ Sagittarii σ Sagittarii	2·I	19 57	211
τ Sagittarii	3.4	19 58	206
E Sagittarii	3.6	20 24	226
π Sagittarii	3.0	20 36	226
β Capricorni	3.3	22 4	241
ζ Capricorni	3.9	22 47	222
δ Capricorni	3.0	23. 27	237
- 1			1
		*	-

Star.	Mag.	L.S.T.	Az.
		h. m.	0
α Pegasi	2.6	0 44	303
γ Pegasi	2.9	I 52	302
n Piscium	3.7	3 10	303
β Arietis	2.7	3 16	317
α Arietis	2.2	3 16	325
17 Tauri	3.8	4 49	327
η Tauri	3.0	4 52	327
ε Tauri	3.6	5 55	313
γ Tauri	3.9	5 56	304
α Tauri	1.1	6 10	307
ζ Tauri	3.0	6 56	319
μ Geminorum	3.2	7 34	323
ε Geminorum	3.5	7 39	332
γ Geminorum	1.9	8 12	307
ξ Geminorum	3.4	8 28	299
δ Geminorum	3.2	8 33	322
β Canis Minoris	3.1	9 18	289
β Cancri	3.8	10 5	291
ε Leonis	3.1.	10 48	328
γ¹ Leonis	2.6	11 41	316
α Leonis	1.3	11 52	297
δ Leonis	2.6	12 34	318
θ Leonis	3.4	12 50	305
β Leonis	2.2	13 27	303
ε Virginis	3.0	14 48	295
η Boötis	2.8	15 23	312
α Boötis	0.2	15 41	314
γ Serpentis	3·9 2·8	17 33	305
β Herculis γ Herculis	3.8	17 47 17 48	320
γ Herculis δ Herculis	3.5	18 14	314 331
α Herculis	3.2	18 55	302
α Ophiuchi	2·I	19 19	298
ζ Aquilæ	3.0	20 48	300
α Delphini	3.9	22 17	305
ε Delphini	4.0	22 20	29 4
Pegasi	4.0	23 5	331
μ Pegasi	3.7	23 53	328
r=0 ····	,		-
1		-,.	
		*	
		, .	İ

Star.	Mag.	L.S.T.	Az.	
- 		h. m.		
β Arietis	2.7			l
β Arietis $α$ Arietis	2·7 2·2	0 29 0 56	4I	
	3.9	0 56 2 36	32	l
γ Tauri 17 Tauri ·	3.8	2 38	54	l
η Tauri	3.0	2 41	29	
α Tauri	1.1		30	l
ε Tauri	3.6		51 45	l
ζ Tauri	3.0	2 57 4 15	,45 38	l
ξ Geminorum	3.4			l
	1.9		59	l
γ Geminorum μ Geminorum	3.2	4 57	51	l
ε Geminorum	3.2	5 8 5 47	34 24	l
δ Geminorum		6 2		l
β Cancri	3·5 3·8	6 20	35	l
o Leonis	3.8		65	l
α Leonis	1.3	7 47 8 18	61	l
ε Leonis	3.1	8 41	28	١
γ¹ Leonis	2.6	8 53	41	l
θ Leonis	3.4	1 20	52	ĺ
δ Leonis	2.6	9 33	39	l
β Leonis	2.2	10 5		١
ε Virginis	3.0	11 10	55 63	l
η Boötis	2.8	12 23	45	l
α Boötis	0.5	12 47	43	l
γ Serpentis	3.9	14 16	52	l
γ Herculis	3.8	14 52	44	l
β Herculis	2.8	15 12	37	l
α Herculis	3.5	15 30	56	١
α Ophiuchi		15 45	60	l
δ Herculis	3.2	16 18	25	١
ζ Aquilæ	3.0	17 19	58	١
γ Aquilæ	2.8	17 52	65	l
ε Delphini	4.0	18 40	64	l
α Delphini	3.9	18 58	53	l
ζ Pegasi	3.6	20 47	65	١
le Pegasi	4.0	21 9	25	l
α Pegasi	2.6	21 21	55	١
μ Pegasi	3.7	21 46	28	I
γ Pegasi	2.9	22 29	56	1
η Piscium	3.7	23 47	55	l
· ·	- '	"		l
1				l
				l
				ı
			1	ı
1.0				۱
		1		ı
				١
9	l	1	!	F

Star.	Mag.	L.S.T.	Az.
	<u> </u>	h. m.	<u> </u>
ε Eridani	3.8	1 32	106
γ Eridani	3.5	2 2	115
53 Eridani	4.0	2 43	116
μ Leporis	3.3	3 22	120
ε Leporis	3.3	3 31	135
α Leporis	2.7	3 45	124
β Leporis	3.0	3 49	130
β Canis Majoris	2.0	4 35	124
α Canis Majoris	–r·6	4 55	121
o ² Canis Majoris	3.1	5 34	138
δ Canis Majoris	2.0	5 51	146
22 Canis Majoris	3.7	5 54	151
ε Canis Majoris	r·6	5 58	155
ξ Argus	3.2	6 24	141
η Canis Majoris	2.4	6 27	156
ρ Argus	2.9	6 40	139
α Hydræ	2.2	7 26	103
ν Hydræ	3.3	8 58	119
δ Crateris	3.8	9 24	116
γ Corvi	2.8	10 27	122
ε Corvi	3.2	10 34	134
δ Corvi	3.1	10 38	119
β Corvi	2.8	11 1	136
γ Hydræ	3.3	11 44	135
π Hydræ	3.2	12 48	146
α Libræ	2.9	12 58	119
γ Scorpii	3.4	13 39	142
β¹Scorpii	2.9	14 21	127
δ Scorpii	2.5	14 24	135
π Scorpii	3.0	14 38	144
σ Scorpii	3.1	14 58	143
α Scorpii	I·2	15 10	145
η Ophiuchi	2.6	15 18	119
τ Scorpii	2.9	15 28	152
θ Ophiuchi	3.4	15 56	141
μ Sagittarii	4.0	16 34	131
λ Sagittarii	2.9	17 5	143
ξ Sagittarii	3.6	17 18	131
π Sagittarii	3.0	17 30	131
φ Sagittarii	3.3	17 32	148
σ Sagittarii	2 · I	17 37	146
τ Sagittarii	3.4	17 58	151
β Capricorni	3.3	18 26	117
ζ Capricorni	3.9	19 53	136
δ Capricorni	3.0	19 56	121
δ Aquarii	3.2	21 3	120
c² Aquarii	3.8	21 31	132
β Ceti	2.3	22 56	125

Star. Mag. L.S.T. Az. δ Aquarii 3·5 0 37 240 c² Aquarii 3·8 0 39 228 β Ceti 2·2 2 22 235 ε Eridani 3·8 5 26 254 γ Eridani 3·2 5 46 245 53 Eridani 4·0 6 25 244 ε Leporis 3·3 6 56 240 β Leporis 3·0 7 1 230 α Leporis 2·7 7 13 236 ε Canis Majoris 3·0 7 1 230 α Leporis 2·7 7 13 236 ε Canis Majoris 3·7 8 2 209 β Canis Majoris 2·4 8 15 204 δ Canis Majoris 3·1 8 26 222 α Canis Majoris 3·1 8 26 222 α Canis Majoris 3·1 8 26 222 α Canis Majoris 3·1 8 26 222 </th <th></th> <th></th> <th>I</th> <th></th>			I	
δ Aquarii 3.5 0 37 240 c² Aquarii 3.8 0 39 228 β Ceti 2.2 2 2 2 254 γ Eridani 3.8 5 26 254 γ Eridani 4.0 6 25 244 ε Leporis 3.3 6 33 225 μ Leporis 3.3 6 56 240 β Leporis 3.0 7 1 230 α Leporis 2.7 7 13 236 ε Canis Majoris 3.7 8 2 205 2 Canis Majoris 2.0 8 3 326 β Canis Majoris 2.0 8 19 214 ο² Canis Majoris 2.4 8 15 204 δ Canis Majoris 2.0 8 19 214 ο² Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris <td>Star.</td> <td>Mng.</td> <td>L. S.T.</td> <td>Az.</td>	Star.	Mng.	L. S.T.	Az.
c² Aquarii 3.8 0 39 228 β Ceti 2.2 2 2 2 35 ε Eridani 3.8 5 26 254 γ Eridani 3.2 5 46 245 53 Eridani 4.0 6 25 244 ε Leporis 3.3 6 33 225 μ Leporis 3.3 6 56 240 β Leporis 2.7 7 13 236 ε Canis Majoris 1.6 7 52 205 22 Canis Majoris 3.7 8 2 209 β Canis Majoris 2.0 8 3 236 η Canis Majoris 2.0 8 19 214 δ Canis Majoris 2.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majo			h. m.	0
β Ceti 2.2 2.2 2.35 ε Eridani 3.8 5.26 254 γ Eridani 4.0 6.25 244 ε Leporis 3.3 6.33 225 μ Leporis 3.3 6.56 240 β Leporis 3.0 7.1 230 α Leporis 2.7 7.13 236 ε Canis Majoris 1.6 7.52 205 22 Canis Majoris 3.7 8.2 209 β Canis Majoris 2.0 8.3 236 γ Canis Majoris 2.0 8.3 236 γ Canis Majoris 2.0 8.19 214 δ Canis Majoris 3.1 8.26 222 α Canis Majoris 3.1 8.26 222 α Canis Majoris 3.1 8.26 222 α Canis Majoris 3.1 8.26 222 α Canis Majoris 3.1 8.26 222 α Canis Majoris 3.1 8.26 222				240
E Eridani 3.8 5 26 254 γ Eridani 3.2 5 46 245 53 Eridani 4.0 6 25 244 ε Leporis 3.3 6 33 225 μ Leporis 3.3 6 56 240 β Leporis 3.0 7 1 230 α Leporis 2.7 7 13 236 ε Canis Majoris 1.6 7 52 205 22 Canis Majoris 3.7 8 2 209 β Canis Majoris 2.0 8 3 236 γ Canis Majoris 2.0 8 19 214 δ Canis Majoris 3.1 8 26 222 α Canis Majoris 2.0 8 19 214 δ 20 20 20 20 20 20 20 20 20 20 20 20 20		-		
γ Eridani 3·2 5 46 245 53 Eridani 4·0 6 25 244 ε Leporis 3·3 6 33 225 μ Leporis 3·3 6 56 240 β Leporis 2·7 7 13 230 α Leporis 2·7 7 13 236 ε Canis Majoris 1·6 7 52 205 22 Canis Majoris 3·7 8 2 209 β Canis Majoris 2·0 8 3 236 γ Canis Majoris 2·0 8 19 214 δ Canis Majoris 3·1 8 26 222 α Canis Majoris -1·6 8 29 239 ξ Argus 3·5 9 8 219 ρ Argus 3·5 9 8 219 ρ Argus 2·9 9 28 221 α Hydræ 3·3 12 34 241 δ Corvi <td></td> <td></td> <td>l</td> <td></td>			l	
53 Eridani 4.0 6 25 244 E Leporis 3.3 6 33 225 μ Leporis 3.3 6 56 240 β Leporis 3.0 7 1 230 α Leporis 2.7 7 13 236 E Canis Majoris 1.6 7 52 205 22 Canis Majoris 2.0 8 3 236 η Canis Majoris 2.0 8 19 214 δ Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris -1.6 8 29 239 ξ Argus 3.5 9 8 219 ρ Argus 2.9 9 28 221 α Hydræ 2.2 11 22 257 ν Hydræ 3.3 12 34 241 δ Crateris 3.8 13 6 244 E Corvi 3.8 13 6 244 E Corvi 2.8 13 59 224 δ Corvi 2.8 13 59 224 δ Corvi 3.1 14 14 241 γ Hydræ 3.3 14 44 225 π Hydræ 3.5 15 16 214 γ Scorpii 3.6 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 3.1 17 34 2217 π Scorpii 3.1 17 34 2217 π Scorpii 3.1 17 34 217 π Scorpii 3.1 17 34 217 π Scorpii 2.9 17 34 208 α Scorpii 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.0 18 54 241 π Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 3.3 19 50 212 σ Sagittarii 3.3 19 50 212 σ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.6 20 28 229 π Sagittarii 3.6 20 28 229 π Sagittarii 3.6 20 40 229 β Capricorni 3.9 22 51 224	T		_	
E Leporis 3.3 6 33 225 μ Leporis 3.3 6 56 240 β Leporis 3.0 7 1 230 α Leporis 2.7 7 13 236 ε Canis Majoris 1.6 7 52 205 22 Canis Majoris 2.0 8 3 236 η Canis Majoris 2.0 8 3 236 η Canis Majoris 2.0 8 15 204 δ Canis Majoris 2.0 8 19 214 δ Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 3.1 8 26 222 α Canis Majoris 2.9 9 28 221 α Hydræ 3.3 5 9 8 219 ρ Argus 2.9 11 22 257 ν Hydræ 3.3 12 34 241 δ Crateris 3.8 13 6 244 ε Corvi 3.2 13 38 226 γ Corvi 2.8 13 57 238 β Corvi 2.8 13 57 238 β Corvi 2.8 13 59 224 δ Corvi 3.1 14 14 241 γ Hydræ 3.3 14 44 225 π Hydræ 3.5 15 16 214 γ Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 3.1 17 34 217 τ Scorpii 3.2 17 38 215 σ Scorpii 3.1 17 34 217 τ Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 41 233 θ Ophiuchi 3.4 18 38 219 η Ophiuchi 2.6 18 54 241 λ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 3.4 20 6 20 28 229 π Sagittarii 3.0 20 40 229 β Sagittarii 3.0 20 40 229 β Sagittarii 3.0 20 40 229 β Sagittarii 3.0 20 40 229 β Capricorni 3.9 22 51 224	'			
μ Leporis 3·3 6 56 240 β Leporis 3·0 7 1 230 α Leporis 2·7 7 13 236 ε Canis Majoris 1·6 7 52 205 22 Canis Majoris 2·0 8 3 236 η Canis Majoris 2·0 8 3 236 η Canis Majoris 2·0 8 19 214 δ Canis Majoris 3·1 8 26 222 α Canis Majoris -1·6 8 29 239 ξ Argus 3·5 9 8 219 ρ Argus 2·9 9 28 221 α Hydræ 2·2 11 22 257 ν Hydræ 3·3 12 34 241 δ Crateris 3·8 13 6 244 ε Corvi 3·2 13 38 226 γ Corvi 2·8 13 57 238 β Corvi 2·8 13 57 238 β Corvi 2·8 13 59 224 δ Corvi 3·1 14 14 241 γ Hydræ 3·3 14 44 225 π Hydræ 3·3 14 44 225 π Hydræ 3·5 15 16 214 γ Scorpii 3·1 16 19 218 α Libræ 2·9 16 34 241 π Scorpii 3·4 16 19 218 α Libræ 2·9 16 34 241 π Scorpii 3·1 17 34 217 τ Scorpii 3·1 17 34 217 τ Scorpii 2·9 17 34 208 α Scorpii 2·9 17 34 208 α Scorpii 2·9 17 34 208 α Scorpii 2·9 17 34 208 α Scorpii 2·9 17 34 208 α Scorpii 2·9 17 41 233 θ Ophiuchi 3·4 18 38 219 η Ophiuchi 2·6 18 54 241 λ Sagittarii 2·9 19 41 217 μ Sagittarii 2·9 19 41 217 μ Sagittarii 2·9 19 41 217 μ Sagittarii 2·9 19 41 217 μ Sagittarii 2·9 19 41 217 μ Sagittarii 2·9 19 41 217 μ Sagittarii 2·9 19 41 217 μ Sagittarii 2·9 19 41 217 η Sagittarii 2·9 19 41 217 η Sagittarii 2·9 19 41 217 η Sagittarii 3·4 10 19 44 229 η Sagittarii 3·4 20 6 209 ξ Sagittarii 3·6 20 28 229 π Sagittarii 3·6 20 28 229 η Sagittarii 3·6 20 28 229 η Sagittarii 3·6 20 28 229 η Sagittarii 3·6 20 28 229 η Sagittarii 3·6 20 28 229 η Sagittarii 3·6 20 28 229 η Sagittarii 3·6 20 28 229 η Sagittarii 3·6 20 28 229 η Sagittarii 3·6 20 28 229				
α Leporis 2.7 7 13 236 ε Canis Majoris 1.6 7 52 205 22 Canis Majoris 3.7 8 2 209 β Canis Majoris 2.0 8 3 236 η Canis Majoris 2.0 8 19 214 δ Canis Majoris 3.1 8 26 222 α Canis Majoris -1.6 8 29 239 ξ Argus 3.5 9 8 219 ρ Argus 2.9 9 28 221 α Hydræ 3.3 12 34 241 δ Crateris 3.8 13 6 244 ε Corvi 3.2 13 38 226 γ Corvi 2.8 13 57 238 β Corvi 3.1 14 14 241 γ Hydræ 3.3 14 44 225 π Hydræ 3.5	μ Leporis			
E Canis Majoris 1.6 7 52 205 22 Canis Majoris 3.7 8 2 209 β Canis Majoris 2.0 8 3 236 η Canis Majoris 2.0 8 19 214 δ Canis Majoris 3.1 8 26 222 α Canis Majoris -1.6 8 29 239 ξ Argus 2.9 9 28 221 α Hydræ 2.2 11 22 257 ν Hydræ 3.3 12 34 241 δ Crateris 3.8 13 6 244 ε Corvi 2.8 13 57 238 β Corvi 2.8 13 57 238 β Corvi 2.8 13 57 238 β Corvi 3.1 14 14 241 γ Hydræ 3.3 14 44 225 π Hydræ 3.5 15 16 214 γ Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 η Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 3.0 17 10 216 δ Scorpii 3.1 17 34 221 π Scorpii 2.9 16 34 241 π Scorpii 2.9 16 34 241 π Scorpii 2.9 16 34 241 π Scorpii 2.9 16 34 241 η Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 η Sagittarii 2.9 19 41 217 η Sagittarii 2.9 19 41 217 η Sagittarii 3.3 19 50 212 σ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.6 20 28 229 π Sagittarii 3.6 20 28 229 π Sagittarii 3.6 20 28 229 π Sagittarii 3.6 20 28 229 π Sagittarii 3.9 22 51 224			, ,	
22 Canis Majoris 3.7 8 2 209 β Canis Majoris 2.0 8 3 236 η Canis Majoris 2.0 8 19 214 δ Canis Majoris 3.1 8 26 222 α Canis Majoris -1.6 8 29 239 ξ Argus 2.9 9 28 221 α Hydræ 2.2 11 22 257 ν Hydræ 3.3 12 34 241 δ Crateris 3.8 13 6 244 ε Corvi 2.8 13 57 238 β Corvi 2.8 13 57 238 β Corvi 2.8 13 59 224 δ Corvi 3.1 14 14 241 γ Hydræ 3.3 14 44 225 π Hydræ 3.3 14 44 225 π Hydræ 3.5 15 16 214 γ Scorpii 3.6 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 3.1 17 34 241 π Scorpii 3.1 17 34 241 π Scorpii 3.1 17 34 217 τ Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 η Sagittarii 2.9 19 41 217 η Sagittarii 2.9 19 41 217 η Sagittarii 2.9 19 41 217 η Sagittarii 2.9 19 41 217 η Sagittarii 2.0 3 214 τ Sagittarii 3.3 19 50 212 σ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.6 20 28 229 π Sagittarii 3.7 22 6 243 ζ Capricorni 3.9 22 51 224				
β Canis Majoris 2.0 8 3 236 η Canis Majoris 2.4 8 15 204 δ Canis Majoris 3.1 8 26 222 α Canis Majoris -1.6 8 29 239 ξ Argus 3.5 9 8 219 ρ Argus 2.9 9 28 221 α Hydræ 2.9 9 28 221 α Hydræ 2.9 9 28 221 α Hydræ 2.2 11 22 257 ν Hydræ 3.3 12 34 241 δ Crateris 3.8 13 6 244 ε Corvi 2.8 13 57 238 β Corvi 2.8 13 57 238 β Corvi 2.8 13 59 224 δ Corvi 3.3 14 44 225 π Hydræ <t< td=""><td></td><td></td><td></td><td></td></t<>				
η Canis Majoris 2.4 8 15 204 δ Canis Majoris 2.0 8 19 214 ο² Canis Majoris 3.1 8 26 222 α Canis Majoris -1.6 8 29 239 ξ Argus 3.5 9 8 219 ρ Argus 2.9 9 28 221 α Hydræ 2.2 11 22 257 ν Hydræ 3.3 12 34 241 δ Crateris 3.8 13 6 244 ε Corvi 3.2 13 38 226 γ Corvi 2.8 13 57 238 β Corvi 2.8 13 57 238 β Corvi 2.8 13 59 224 δ Corvi 2.8 13 59 224 δ Corvi 3.1 14 14 241 γ Hydræ 3.5 15 16 214 γ Scorpii 3.4 16 19 218 α Libræ			l .	
8 Canis Majoris 2.0 8 19 214 0² Canis Majoris 3.1 8 26 222 α Canis Majoris -1.6 8 29 239 ξ Argus 3.5 9 8 219 ρ Argus 2.9 9 28 221 α Hydræ 2.2 11 22 257 ν Hydræ 3.3 12 34 241 δ Crateris 3.8 13 6 244 ε Corvi 2.8 13 57 238 β Corvi 2.8 13 57 238 β Corvi 2.8 13 59 224 δ Corvi 3.1 14 14 241 γ Hydræ 3.3 14 44 225 π Hydræ 3.5 15 16 214 γ Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 3.0 17 10 216 δ Scorpii 2.9 16 34 241 π Scorpii 2.9 16 34 241 π Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 κ Sagittarii 2.9 19 41 217 κ Sagittarii 3.4 18 38 219 γ Sagittarii 2.9 19 41 217 κ Sagittarii 2.9 19 41 217 κ Sagittarii 2.9 19 41 217 κ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.6 20 28 229 π Sagittarii 3.6 20 28 229 π Sagittarii 3.6 20 28 229 π Sagittarii 3.6 20 28 229 π Sagittarii 3.7 22 6 243 ζ Capricorni 3.9 22 51 224	' ~ ' 74" '			
0² Canis Majoris 3·1 8 26 222 α Canis Majoris -1·6 8 29 239 ξ Argus 3·5 9 8 219 ρ Argus 2·9 9 28 221 α Hydræ 2·2 11 22 257 ν Hydræ 3·3 12 34 241 δ Crateris 3·8 13 6 244 ε Corvi 3·2 13 38 226 γ Corvi 2·8 13 57 238 β Corvi 2·8 13 59 224 δ Corvi 2·8 13 59 224 δ Corvi 2·8 13 59 224 δ Corvi 3·1 14 14 241 γ Hydræ 3·5 15 16 214 γ Scorpii 3·4 16 19 218 α Libræ 2·9 16 34 241 π Scorpii 2·5 17 26 225			_	1
α Canis Majoris -1.6 8 29 239 ξ Argus 3.5 9 8 219 ρ Argus 2.9 9 28 221 α Hydræ 3.3 12 34 241 δ Crateris 3.8 13 6 244 ε Corvi 3.2 13 38 226 γ Corvi 2.8 13 57 238 β Corvi 2.8 13 59 224 δ Corvi 2.8 13 59 224 δ Corvi 2.8 13 59 224 δ Corvi 3.1 14 14 241 γ Hydræ 3.5 15 16 214 γ Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 2.9 17 34 225 σ Scorpii 2.9 17 34 208 α Scorpii 2.9 17 41 233 <td>o² Canis Majoris</td> <td></td> <td></td> <td></td>	o ² Canis Majoris			
ξ Argus 3·5 9 8 219 ρ Argus 2·9 9 28 221 α Hydræ 2·2 11 22 257 ν Hydræ 3·3 12 34 241 δ Crateris 3·8 13 6 244 ε Corvi 2·8 13 57 238 β Corvi 2·8 13 59 224 δ Corvi 2·8 13 59 224 δ Corvi 2·8 13 59 224 δ Corvi 2·8 13 59 224 δ Corvi 3·1 14 14 241 γ Hydræ 3·3 14 44 225 π Hydræ 3·4 16 19 218 α Libræ 2·9 16 34 241 π Scorpii 2·5 17 26 225 <tr< td=""><td></td><td></td><td></td><td></td></tr<>				
ρ Argus 2·9 9 28 221 α Hydræ 2·2 11 22 257 ν Hydræ 3·3 12 34 241 δ Crateris 3·8 13 6 244 ε Corvi 3·2 13 38 226 γ Corvi 2·8 13 57 238 β Corvi 2·8 13 59 224 δ Corvi 2·8 13 59 224 δ Corvi 3·1 14 14 241 γ Hydræ 3·3 14 44 225 π Hydræ 3·3 14 44 225 π Hydræ 3·4 16 19 218 α Libræ 2·9 16 34 241 π Scorpii 2·5 17 26 225 σ Scorpii 2·5 17 26 225 σ Scorpii 2·9 17 41 233 θ Ophiuchi 2·9 17 41 23				
α Hydræ 2·2 11 22 257 ν Hydræ 3·3 12 34 241 δ Crateris 3·8 13 6 244 ε Corvi 3·2 13 38 226 γ Corvi 2·8 13 57 238 β Corvi 2·8 13 59 224 δ Corvi 3·1 14 14 241 γ Hydræ 3·3 14 44 225 π Hydræ 3·5 15 16 214 γ Scorpii 3·4 16 19 218 α Libræ 2·9 16 34 241 π Scorpii 2·5 17 26 225 σ Scorpii 2·9 17 34 208 α Scorpii 2·9 17 41 233 θ Ophiuchi 2·9 17 41 233 θ Ophi		2.9	9 28	22 I
δ Crateris 3.8 13 6 244 ε Corvi 3.2 13 38 226 γ Corvi 2.8 13 57 238 β Corvi 2.8 13 59 224 δ Corvi 3.1 14 14 241 γ Hydræ 3.3 14 44 225 π Hydræ 3.5 15 16 214 γ Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 2.5 17 26 225 σ Scorpii 2.9 17 34 208 α Scorpii 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 <td>α Hydra</td> <td></td> <td>11 22</td> <td></td>	α Hydra		11 22	
E Corvi 3.2 13 38 226 γ Corvi 2.8 13 57 238 β Corvi 2.8 13 59 224 δ Corvi 3.1 14 14 241 γ Hydræ 3.3 14 44 225 π Hydræ 3.5 15 16 214 γ Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 3.0 17 10 216 δ Scorpii 2.5 17 26 225 σ Scorpii 2.5 17 26 225 σ Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 34 208 α Scorpii 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.6 18 54 241 λ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 3.3 19 50 212 σ Sagittarii 3.3 19 50 212 σ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.6 20 28 229 π Sagittarii 3.6 20 28 229 π Sagittarii 3.7 22 6 243 ζ Capricorni 3.9 22 51 224				
γ Corvi 2.8 13 57 238 β Corvi 2.8 13 59 224 δ Corvi 3.1 14 14 241 γ Hydræ 3.3 14 44 225 π Hydræ 3.5 15 16 214 γ Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 2.5 17 26 225 σ Scorpii 2.5 17 26 225 σ Scorpii 2.9 17 34 208 α Scorpii 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.6 18 54 241 λ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 <				
β Corvi 2.8 13 59 224 δ Corvi 3.1 14 14 241 γ Hydræ 3.3 14 44 225 π Hydræ 3.5 15 16 214 γ Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 2.5 17 26 225 σ Scorpii 2.9 17 34 208 α Scorpii 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 θ Ophiuchi 2.6 18 54 241 λ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 44 229 σ Sagittarii 3.4				
δ Corvi 3·I 14 14 24I γ Hydræ 3·3 14 44 225 π Hydræ 3·5 15 16 214 γ Scorpii 3·4 16 19 218 α Libræ 2·9 16 34 24I π Scorpii 2·5 17 26 225 σ Scorpii 2·5 17 26 225 σ Scorpii 2·9 17 34 208 α Scorpii 2·9 17 41 233 θ Ophiuchi 2·9 17 41 233 θ Ophiuchi 2·6 18 54 24I λ Sagittarii 2·9 19 41 217 μ Sagittarii 2·9 19 41 217 μ Sagittarii 2·9 19 41 217 μ Sagittarii 2·1 20 3				
γ Hydræ 3·3 14 44 225 π Hydræ 3·5 15 16 214 γ Scorpii 3·4 16 19 218 α Libræ 2·9 16 34 241 π Scorpii 3·0 17 10 216 δ Scorpii 2·5 17 26 225 σ Scorpii 2·9 17 34 217 τ Scorpii 2·9 17 41 233 θ Ophiuchi 2·9 17 41 233 θ Ophiuchi 2·6 18 54 241 λ Sagittarii 2·9 19 41 217 μ Sagittarii 2·9 19 41 217 μ Sagittarii 3·3 19 50 212 σ Sagittarii 2·1 20 3 214 τ Sagittarii 3·4 20 6 209 ξ Sagittarii 3·0 20 40 229 π Sag	S Corvi			
π Hydræ 3.5 15 16 214 γ Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 3.0 17 10 216 δ Scorpii 3.0 17 10 216 δ Scorpii 3.1 17 34 217 τ Scorpii 2.9 17 34 208 α Scorpii 1.2 17 38 215 β¹ Scorpii 2.9 17 41 233 θ Ophiuchi 2.6 18 54 241 λ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 44 229 φ Sagittarii 3.3 19 50 212 σ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.6 20 28 229 π Sagittarii 3.6 20 28 229 π Sagittarii 3.6 20 28 229 π Sagittarii 3.7 22 6 243 ζ Capricorni 3.9 22 51 224	l			
γ Scorpii 3.4 16 19 218 α Libræ 2.9 16 34 241 π Scorpii 3.0 17 10 216 δ Scorpii 2.5 17 26 225 σ Scorpii 2.9 17 34 208 α Scorpii 1.2 17 38 215 β¹Scorpii 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 η Ophiuchi 2.6 18 54 241 λ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 44 229 φ Sagittarii 3.3 19 50 212 σ Sagittarii 2.1 20 3 214 τ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.6 20 28 229 π Sagittarii 3.0 20 40 229	π Hydræ			
α Libræ 2.9 16 34 241 π Scorpii 3.0 17 10 216 δ Scorpii 2.5 17 26 225 σ Scorpii 2.9 17 34 217 τ Scorpii 2.9 17 34 208 α Scorpii 1.2 17 38 215 β¹Scorpii 2.9 17 41 233 θ Ophiuchi 2.9 17 41 233 η Ophiuchi 2.6 18 54 241 λ Sagittarii 2.9 19 41 217 μ Sagittarii 4.0 19 44 229 φ Sagittarii 3.3 19 50 212 σ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.6 20 28 229 π Sagittarii 3.0 20 40 229 β Capricorni 3.9 22 51 224				
π Scorpii 3.0 17 10 216 δ Scorpii 2.5 17 26 225 σ Scorpii 2.9 17 34 217 τ Scorpii 2.9 17 34 208 α Scorpii 1.2 17 38 215 β¹ Scorpii 2.9 17 41 233 θ Ophiuchi 3.4 18 38 219 η Ophiuchi 2.6 18 54 241 λ Sagittarii 2.9 19 41 217 μ Sagittarii 2.9 19 44 229 φ Sagittarii 3.3 19 50 212 σ Sagittarii 2.1 20 3 214 τ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.6 20 28 229 π Sagittarii 3.0 20 40 229 β Capricorni 3.3 22 6 243 ζ Capricorni 3.9 22 51 224				
σ Scorpii 3·1 17 34 217 τ Scorpii 2·9 17 34 208 α Scorpii 1·2 17 38 215 β¹Scorpii 2·9 17 41 233 θ Ophiuchi 3·4 18 38 219 η Ophiuchi 2·6 18 54 241 λ Sagittarii 2·9 19 41 217 μ Sagittarii 4·0 19 44 229 φ Sagittarii 3·3 19 50 212 σ Sagittarii 2·1 20 3 214 τ Sagittarii 3·4 20 6 209 ξ Sagittarii 3·6 20 28 229 π Sagittarii 3·6 20 28 229 π Sagittarii 3·6 20 28 229 π Sagittarii 3·3 22 6 243 ζ Capricorni 3·9 22 51 224				
τ Scorpii 2·9 17 34 208 α Scorpii 1·2 17 38 215 β¹Scorpii 2·9 17 41 233 θ Ophiuchi 3·4 18 38 219 η Ophiuchi 2·6 18 54 241 λ Sagittarii 2·9 19 41 217 μ Sagittarii 4·0 19 44 229 φ Sagittarii 3·3 19 50 212 σ Sagittarii 2·1 20 3 214 τ Sagittarii 3·4 20 6 209 ξ Sagittarii 3·6 20 28 229 π Sagittarii 3·6 20 28 229 π Sagittarii 3·6 20 28 229 β Capricorni 3·3 22 6 243 ζ Capricorni 3·9 22 51 224			'	
α Scorpii 1·2 17 38 215 β¹Scorpii 2·9 17 41 233 θ Ophiuchi 3·4 18 38 219 η Ophiuchi 2·6 18 54 241 λ Sagittarii 2·9 19 41 217 μ Sagittarii 4·0 19 44 229 φ Sagittarii 3·3 19 50 212 σ Sagittarii 2·1 20 3 214 τ Sagittarii 3·4 20 6 209 ξ Sagittarii 3·6 20 28 229 π Sagittarii 3·6 20 28 229 π Sagittarii 3·6 20 28 229 β Capricorni 3·3 22 6 243 ζ Capricorni 3·9 22 51 224				
β¹Scorpii 2·9 17 41 233 θ Ophiuchi 3·4 18 38 219 η Ophiuchi 2·6 18 54 241 λ Sagittarii 2·9 19 41 217 μ Sagittarii 4·0 19 44 229 φ Sagittarii 3·3 19 50 212 σ Sagittarii 2·1 20 3 214 τ Sagittarii 3·4 20 6 209 ξ Sagittarii 3·6 20 28 229 π Sagittarii 3·6 20 40 229 β Capricorni 3·3 22 6 243 ζ Capricorni 3·9 22 51 224				
0 Ophiuchi 3.4 18 38 219 η Ophiuchi 2.6 18 54 241 λ Sagittarii 2.9 19 41 217 μ Sagittarii 4.0 19 44 229 φ Sagittarii 3.3 19 50 212 σ Sagittarii 2.1 20 3 214 τ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.6 20 28 229 π Sagittarii 3.0 20 40 229 β Capricorni 3.3 22 6 243 ζ Capricorni 3.9 22 51 224				
η Ophiuchi 2.6 18 54 241 λ Sagittarii 2.9 19 41 217 μ Sagittarii 4.0 19 44 229 φ Sagittarii 3.3 19 50 212 σ Sagittarii 2.1 20 3 214 τ Sagittarii 3.4 20 6 209 ξ Sagittarii 3.6 20 28 229 π Sagittarii 3.0 20 40 229 β Capricorni 3.3 22 6 243 ζ Capricorni 3.9 22 51 224			18 38	
λ Sagittarii 2·9 19 41 217 μ Sagittarii 4·0 19 44 229 φ Sagittarii 3·3 19 50 212 σ Sagittarii 2·1 20 3 214 τ Sagittarii 3·4 20 6 209 ξ Sagittarii 3·6 20 28 229 π Sagittarii 3·0 20 40 229 β Capricorni 3·3 22 6 243 ζ Capricorni 3·9 22 51 224	n Ophiuchi			
μ Sagittarii 4·0 19 44 229 φ Sagittarii 3·3 19 50 212 σ Sagittarii 2·1 20 3 214 τ Sagittarii 3·4 20 6 209 ξ Sagittarii 3·6 20 28 229 π Sagittarii 3·0 20 40 229 β Capricorni 3·3 22 6 243 ζ Capricorni 3·9 22 51 224	λ Sagittarii			
φ Sagittarii 3·3 19 50 212 σ Sagittarii 2·1 20 3 214 τ Sagittarii 3·4 20 6 209 ξ Sagittarii 3·6 20 28 229 π Sagittarii 3·0 20 40 229 β Capricorni 3·3 22 6 243 ζ Capricorni 3·9 22 51 224	μ Sagittarii			
τ Sagittarii 3·4 20 6 209 ξ Sagittarii 3·6 20 28 229 π Sagittarii 3·0 20 40 229 β Capricorni 3·3 22 6 243 ζ Capricorni 3·9 22 51 224	φ Sagittarii	3.3	19 50	
ξ Sagittarii 3·6 20 28 229 π Sagittarii 3·0 20 40 229 β Capricorni 3·3 22 6 243 ζ Capricorni 3·9 22 51 224	σ Sagittarii		20 3	
π Sagittarii 3·0 20 40 229 β Capricorni 3·3 22 6 243 ζ Capricorni 3·9 22 51 224	τ Sagittarii	3.4		
β Capricorni 3·3 22 6 243 ζ Capricorni 3·9 22 51 224	ς Sagittarii			
ζ Capricorni 3.9 22 51 224				
8 Capricorni 3.0 23 30 239	Capricorni			
	8 Capricorni			

Star.	Mag.	L.S.T.	Az.
		h. m.	0
ζ Pegasi	3.6	0 27	295
α Pegasi	2.6	0 41	305
γ Pegasi	2.9	1 49	304
η Piscium	3.7	3 7	305
α Arietis	2.2	3 10	328
β Arietis	2.7	3 11	319
17 Tauri	3.8	4 42	331
η Tauri	3.0	4 45	330
ε Tauri	3.6	5 51	315
γ Tauri	3.9	5 54	306
α Tauri	I • I	6 7	309
ζ Tauri	3.0	6 51	322
μ Geminorum	3.2	7 28 7 31	326
ε Geminorum	3.2		336
γ Geminorum	1.9	8 9	309
ξ Geminorum	3.4	8 26	301
8 Geminorum	3.2	8 28	325
β Canis Minoris	3⋅1	9 16	291
β Cancri	3.8	10 4	293
ε Leonis	3. I	10 41	332
o Leonis	3.8	II 27	295
γ¹ Leonis	2.6	II 37	319
α Leonis	1.3	11 50	299
δ Leonis	2.6	12 29	321
θ Leonis	3.4	12 47	308
β Leonis	2.5	13 25	305
ε Virginis	3.0	14 46	297
η Boötis	2.8	15 19	315
α Boötis	0.2	15 37	317
γ Serpentis	3.9	17 30	308
β Herculis	2.8	17 42	323
γ Herculis δ Herculis	3.8	17 44 18 6	316
	3.2		335
0 11 11	3·5	, ,	304 300
α Ophiuchi ζ Aquilæ	3.0	19 17 20 45	302
	2.8	21 32	295
γ Aquilæ α Delphini	3.9	22 14	307
ε Delphini	4.0	22 18	296
i Pegasi	4.0	22 57	335
μ Pegasi	3.7	23 46	332
F	<i>J</i> /	~J T*	","
* *			
		-	
*			
*	*		

L.S.T. Star. Mag. Az. h. m. β Arietis ... 38 2.7 0 34 α Arietis ... 2.2 29 Tauri 3.9 2 39 51 17 Tauri 3.8 2 45 26 η Tauri 2 48 26 3.0 α Tauri 2 59 I.I 49 3.6 Tauri 3 I 42 Tauri 36 4 20 3.0 Geminorum ... 3.4 4 59 57 γ Geminorum ... 1.9 5 I 49 5 14 5 32 μ Geminorum ... 3.2 31 B Canis Minoris *3*⋅1 67 δ Geminorum ... 6 8 32 3.2 β Cancri ... 3.8 6 22 65 o Leonis ... 3.8 7 63 49 α Leonis ... 8 20 1:3 59 p Leonis ... 8 40 65 3.9 $2\overset{\checkmark}{4}$ ε Leonis ... 3.1 8 49 γ¹ Leonis ... 8 58 38 2.6 θ Leonis ... 3.4 9 36 50 δ Leonis ... 2.6 9 56 36 β Leonis ... 2.2 10 8 52 ε Virginis... 61 3.0 II I2 η Boötis 2.8 12 27 43 α Boötis ... 0.2 12 52 40 γ Serpentis 3.9 14 19 50 γ Herculis 3.8 14 56 **4**I x Ophiuchi 65 3.4 15 4 8 Herculis 2.8 15 17 34 54 58 65 α Herculis 3.2 15 32 α Ophiuchi 15 48 2·1 72 Ophiuchi 3.7 16.13 56 63 ζ Aquilæ ... 3.0 17 21 γ Aquilæ ... 2.8 17 54 ε Delphini 18 42 62 4.0 α Delphini 19 I 51 3.9 ε Pegasi ... 2.5 65 19 50 ζ Pegasi 3.6 20 49 63 α Pegasi ... 21 23 53 24 2.6 μ Pegasi ... 3.7 21 54 γ Pegasi ... 22 31 2.9 53 n Piscium... 3.7 23 50 53

Star.	Mag.	L. S.T.	Az.
		h. m.	0
γ Eridani	3.2	2 0	113
μ Leporis	3.3	3 19	118
ε Leporis	3.3	3 27	132
α Leporis	2.7	3 43	122
β Leporis	3.0	3 45	128
β Canis Majoris	2.0	4 33	122
α Canis Majoris	-1.6	4 53	119
ζ Canis Majoris	3.1	5 21	155.
o ² Canis Majoris	3.1	5 30	136
δ Canis Majoris	2.0	5 46	143
22 Canis Majoris	3.7	5 47	147
ε Canis Majoris	1.6		151
η Canis Majoris	2.4	5 51 6 19	152
ξ Argus	3.5	6 19	138
ρ Argus	2.9	6 36	137
ν Hydræ	3.3	8 55	117
γ Corvi	2.8	10 24	120
ε Corvi	3.2	10 31	132
δ Corvi	3.1	10 36	117
β Corvi	2.8	10 57	134
γ Hydræ	3.3	11 40	133
π Hydræ	3.2	12 43	143
α Libræ	2.9	12 55	117
γ Scorpii	3.4	13 34	139
β^1 Scorpii	2.9	14 18	125
δ Scorpii	2.2	14 20	132
π Scorpii	3.0	14 33	142
σ Scorpii	3.1	14 53	140
α Scorpii	1.2	15 4	142
η Ophiuchi	2.6	15 15	117
τ Scorpii θ Ophiuchi	2.9	15 21	148
<u> </u>	3.4	15 52	139
μ Sagittarii λ Sagittarii	4.0	16 30	129
× 0	2·9 3·6	17 0	140
0 C	2.8	17 15 17 20	129
φ Sagittarii	3.3	17 20 17 26	155
π Sagittarii	3.0	_,	145 129
σ Sagittarii	2·I	17 27 17 31	143
τ Sagittarii	3.4	17 51	147
ζ Sagittarii	2.7	18 I	155
β Capricorni	3.3	18 24	115
ζ Capricorni	3.9	19 49	133
δ Capricorni	3.0	19 54	119
δ Aquarii	3.2	21 0	118
c² Aquarii	3.8	21 28	130
a Piscis Australis	1.3	21 58	156
β Ceti	2.2	22 54	123
			1

Star.	Mag.	L. S.T.	Az.
•		h. m.	0
δ Aquarii	3.5	0 40	242
c² Aquarii	3.8	0 42	230
β Ceti	2.2	2 24	237
γ Eridani	3.2	5 48	247
ε Leporis	3.3	6 37	228
μ Leporis	3.3	6 59	242
β Leporis	3.0	7 5	232
ζ Canis Majoris	3.1	7 13	205
α Leporis	2.7	7 15	238
ε Canis Majoris	1.6	7 59 8 5	209
β Canis Majoris	2.0		238
22 Canis Majoris	3.7	8 9 8 23	213 208
η Canis Majoris δ Canis Majoris	2.4	8 23 8 24	217
o ² Canis Majoris	3.1	8 30	224
α Canis Majoris	-1.6	8 31	24I
ξ Argus	3.5	9 13	222
ρ Argus	2.9	9 32	223
v Hydræ	3.3	12 37	243
ε Corvi	3.2	13 41	228
γ Corvi	2.8	14 0	240
β Corvi	2.8	14 3	226
δ Corvi	3⋅1	14 16	243
γ Hydræ	3.3	14 48	227
π Hydræ	3.2	15 21	217
γ Scorpii	3.4	16 24	221
α Libræ	2.9	16 37	243
π Scorpii	3.0	17 15	218
δ Scorpii	2.5	17 30	228
σ Scoprii	3.1	17 39	220
τ Scorpii β¹Scorpii	2.9	17 41	212 235
` G <u>-</u> ::	2.9	17 44 17 44	218
θ Ophiuchi	3.4	17 44 18 42	221
η Ophiuchi	2.6	18 57	243
δ Sagittarii	2.8	19 12	205
λ Sagittarii	2.9	19 46	220
μ Sagittarii	4·ó	19 48	231
ζ Sagittarii	2.7	19 53	205
φ Sagittarii	3.3	19 56	215
σ Sagittarii	2·I	20 9	217
τ Sagittarii	3.4	20 13	213
ξ Sagittarii	3.6	20 31	231
π Sagittarii	3.0	20 43	231
β Capricorni	3.3	22 8	245
ζ Capricorni δ Capricorni	3·0	22 55 23 32	227 24I
a Piscis Austral.	1.3	23 48	204
. 1 10013 11 1007 UV.	- 0		
	·	<u> </u>	

NE. QUADRANT SE. QUADRANT

[1
١	Star.	Mag.	L. S.T.	Az.	
١			h. m.	0	
	β Arietis α Arietis	2.7	0 39 I IO	35 25	
	o Tauri	3.8	1 31	65	
Į	γ Tauri	3.9	2 43	49	
	α Tauri	I.I	3 2	47	ŀ
	ε Tauri	3.6	3 6	39	
	ζ Tauri ξ Geminorum	3.0	4 26	33	
	· ~ ·	3.4	5 I	55	
	γ Geminorum μ Geminorum	3·2	5 4 5 2 I	46 27	
•	β Canis Minoris	3.1		65	
	δ Geminorum	3.5	5 33 6 14	29	
	β Cancri	3.8	6 24	63	
	o Leonis	3.8	7 51	6 <u>1</u>	*
	α Leonis	1.3	8 23	57	
	ρ Leonis ·	3.9	8 42	63	
	Υ¹ Leonis	2.6	9 3	35	
	θ Leonis	3.4	9 39	48	
	δ Leonis	2.6	IO 2	33	
	β Leonis	2.2	10 11	50	
	ε Virginis η Boötis	3·0 2·8	11 14	59	
	η Boötis α Boötis	0.5	12 32 12 57	40	
	γ Serpentis	3.9	12 57 14 22	37 48	
	γ Herculis	3.8	15 I	38	
	х Ophiuchi	3.4	15 6	63	
	β Herculis	2.8	15 23	31	
	α Herculis	3.2	15 35	52	
	α Ophiuchi	2·I	15 50	56	
	72 Ophiuchi	3.7	16 15	63	
	ζ Aquilæ	3.0	17 24	53	
	γ Aquilæ	2.8	17 56	61	
	α Aquilæ ε Delphini		17 58	65	
	ε Delphini α Delphini	4·0 3·9	18 44		
	ε Pegasi	2.5	19 4 19 52	49 63	
	ζ Pegasi	3.6	20 51	61	l
	α Pegasi	2.6	21 26	51	
	γ Pegasi	2.9	22 34	51	
	η Piscium	3.7	23 53	50	
	1				
	,				
	1				
	1		1		
			!		
	! 				•

Star.	Mag.	L. S.T.	Az.
γ Eridani μ Leporis ε Leporis β Leporis β Canis Majoris α Canis Majoris ζ Canis Majoris ο² Canis Majoris	3.2 3.3 3.3 2.7 3.0 2.0 -I.6 3.1 3.1	h. m. 1 59 3 17 3 24 3 40 3 42 4 30 4 51 5 13 5 26	Az. 111 116 130 120 126 120 117 152 133
22 Canis Majoris δ Canis Majoris ε Canis Majoris η Canis Majoris ξ Argus ρ Argus ν Hydræ γ Corvi ε Corvi δ Corvi	3·7 2·0 1·6 2·4 3·5 2·9 3·3 2·8 3·2	5 41 5 44 6 11 6 15 6 31 8 53 10 22 10 27 10 34	144 140 148 148 135 134 115 118
β Corvi γ Hydræ π Hydræ α Libræ γ Scorpii β¹ Scorpii π Scorpii π Scorpii σ Scorpii σ Scorpii σ Scorpii σ	2.8 3.3 3.5 2.9 3.4 2.5 3.0 3.1	10 53 11 37 12 38 12 53 13 30 14 16 14 17 14 28 14 48	131 140 115 136 124 130 139 138
α Scorpii η Ophiuchi τ Scorpii Ο Ophiuchi μ Sagittarii λ Sagittarii γ Sagittarii δ Sagittarii ξ Sagittarii ξ Sagittarii ς Sagittarii ς Sagittarii ς Sagittarii	1·2 2·6 2·9 3·4 4·0 2·9 3·1 2·8 3·6	14 59 15 13 15 15 15 47 16 27 16 56 17 0 17 12 17 12	140 115 145 136 127 138 153 151
π Sagittarii σ Sagittarii τ Sagittarii ζ Sagittarii ζ Capricorni δ Capricorni δ Aquarii c² Aquarii α Piscis Australis β Ceti	3·3 3·0 2·1 3·4 2·7 3·9 3·5 3·8 1·3 2·2	17 20 17 24 17 26 17 45 17 53 19 45 19 52 20 58 21 24 21 50 22 51	142 127 140 144 152 131 117 116 128 152 121

	1	1	
Star.	Mag.	L. S.T.	Az.
	<u>' </u>	h. m.	
δ Aquarii	3.5	0 42	244
c² Aquarii	3.8	0 46	232
β Ceti	2.2	2 27	239
γ Eridani	3.2	5 49	249
ε Leporis	3.3	6 40	230
μ Leporis	3.3	7 1	244
β Leporis	3.0	7 8	234
α Leporis	2.7	7 18	240
ζ Canis Majoris	3.1	7 21	208
ε Canis Majoris	1.6	8 6	212
β Canis Majoris	2.0	8 8	240
22 Canis Majoris	3.7	8 15	216
δ Canis Majoris	2.0	8 29	220
η Canis Majoris	2.4	8 31	212
α Canis Majoris	<u>-1.6</u>	8 33	243
o ² Canis Majoris	3.1	8 34	227
ξ Argus	3.2	9 17	225
ρ Argus	2.9	9 37	226
ν Hydræ	3-3	12 39	245
ε Corvi	3.5	13 45	231
γ Corvi	2.8	14 2	242
β Corvi	2.8	14 7	229
δ Corvi	3.1	14 18	244
γ Hydræ	3.3	14 51	229
π Hydræ	3.2	15 26	220
γ Scorpii	3.4	16 28	224
α Libræ	2.9	16 39	245
π Scorpii	3.0	17 20	221
δ Scorpii	2.5	17 33	230
σ Scorpii	3.1	17 44	222
β¹Scorpii ·	2.9	17 46	236
τ Scorpii	2.9	17 47	215
α Scorpii	1.2	17 49 18 47	
θ Ophiuchi	3·4 2·6		224 245
η Ophiuchi γ Sagittarii	3.1	18 59 19 2	207
γ Sagittarii δ Sagittarii	2.8		209
	2.9	- /	222
λ Sagittarii μ Sagittarii	4.0	19 50	233
μ Sagittarii ζ Sagittarii	2.7	20 I	208
φ Sagittarii	3.3	20 2	218
σ Sagittarii	2·I	20 14	220
τ Sagittarii	3.4	20 19	216
ξ Sagittarii	3.6	20 34	233
π Sagittarii	3.0	20 46	233
ζ Capricorni	3.9	22 59	229
δ Capricorni	3.0	23 34	243
α Piscis Australis		23 56	208
	!		

Star.	Mag.	L. S.T.	Az.
		h m.	-
ν π ·			
ζ Pegasi	3.6	0 23	299
α Pegasi	2.6	0 36	309
γ Pegasi	2.9	I 44	309
α Arietis	2.2	2 56	335
η Piscium	3.7	3 1	310
β Arietis	2.7	3 1	325
o Tauri	3.8	5 9	295
ε Tauri	3.6	5 42	321
γ Tauri	3.9	5 47	311
α Tauri	1.1	6 0	313
ζ Tauri		_	
~ .	3.0	•	327
` ~ ·	3.2	7 15	333
γ Geminorum	1.9	8 2	314
§ Geminorum	3.2	8 16	331
ξ Geminorum	3.4	8 21	305
β Canis Minoris	3·1	9 13	295
β Cancri	3.8	10 0	297
o Leonis	3.8	11 23	299
γ¹ Leonis	2.6	II 27	325
α Leonis	1.3	11 45	303
ρ Leonis	3.9	12 16	297
δ Leonis	2.6	12 18	327
θ Leonis	3.4	12 41	312
β Leonis	2.2	13 19	310
ε Virginis '	3.0	I4 42	301
TO	2.8		320
η Boötis α Boötis	0.2	_	323
α			
γ Serpentis	3.9	17 24	312
β Herculis	2.8	17 31	329
γ Herculis	3.8	17 35	322
к Ophiuchi	3.4	18 42	297
α Herculis	3.2	18 47	308
α Ophiuchi	2·I	19 12	304
72 Ophiuchi	3.7	19 51	297
ζ Aquilæ	3.0	20 40	307
γ Aquilæ	2.8	21 28	299
α Aquilæ	0.9	21 36	295
α Delphini	3.9	22 8	311
ε Delphini	4.0	22 14	300
ε Pegasi	2.5	23 28	297
J	l -		[
		-	
			j 1
	1		j l
	<u>' </u>	<u> </u>	

Star.	Mag.	L.S.T.	Az.
-,	<u></u>	h. m.	•
β Arietis	2.7	0 45	32
o Tauri	3.8	I 33	63
γ Tauri	3.9	2 46	47
α Tauri	I.I	3 6	44
ε Tauri α Orionis	3·6 1·2	3 II 4 1	36 66
α Orionis ζ Tauri	3.0	1 1	29
ξ Geminorum	3.4	4 33 5 4	53
γ Geminorum	1.9		44
μ Geminorum	3.2	5 8 5 30	23
β Canis Minoris	3.1	5 35	63
δ Geminorum	3.2	6 22	25
β Cancri	3.8	6 26	61
o Leonis	3.8	7 53	59
α Leonis	1.3	8 26	54
ρ Leonis	3.9	8 44	61
γ^1 Leonis θ Leonis	2.6	9 9	32
δ Leonis	3·4 2·6	9 43 10 9	45
β-Leonis	2.2	10 9	29 48
ε Virginis	3.0	11 17	57
η Boötis	2.8	12 37	37
α Boötis	0.2	13 2	34
γ Serpentis	3.9	14 26	45
γ Herculis	3.8	15 7	35
х Ophiuchi	3.4	15 9	61
β Herculis	2.8	15 31	27
α Herculis	3.2	15 39	49
α Ophiuchi 72 Ophiuchi	2·I	15 53	54 61
ζ Aquilæ	3·7 3·0	17 28	51
γ Aquilæ	2.8	17 58	59
α Aquilæ	0.9	18 0	63
ε Delphini	4.0	18 47	58
α Delphini	3.9	19 8	46
ε Pegasi	2.5	19 55	Ġι
ζ Pegasi	3.6	20 53	59
α Pegasi	2.6	21 30	48
γ Pegasi	2.9	22 38	48
η Piscium	3.7	23 57	48
	1		
[[
	ł	<u> </u>	

Star.	Mag.	L.S.T.	Az.
		h. m.	0
γ Eridani	3.2	1 58	109
μ. Leporis	3.3	3 15	114
ε Leporis	3.3	3 21	128
α Leporis	2.7	3 38	118
β Leporis	3.0	3 40	124
β Canis Majoris	2.0	4 28	118
α Canis Majoris	–1∙6	4 49	115
ζ Canis Majoris	3.1	5 6	148
o ² Canis Majoris	3.1	5 22	131
22 Canis Majoris	3.7	5 36	142
δ Canis Majoris	2.0	5 36	137
ε Canis Majoris	1.6	5 38	145
η Canis Majoris	2.4	6 5	145
ξ Argus	3.2	6 11	133
ρ Argus	2.9	6 27	132
γ Corvi	2.8	IO 20	116
ε Corvi	3.5	10 24	127
ξ Hydræ	3.7	10 28	153
δ Corvi	3.1	10 32	<i>114</i>
β Corvi	2.8	10 50	129
γ Hydræ	3.3	11.33	128
π Hydræ	3.5	12 33	I 37
γ Scorpii	3.4	13 26	134
β¹Scorpii	2.9	14 13	I22
δ Scorpii	2.5	14 14	128
π Scorpii	3.0	14 24	136
σ Scorpii α Scorpii	3·I	14 44	135
α	- 1	14 55	137
τ Scorpii θ Ophiuchi	2·9	15 10	142
μ Sagittarii	4.0	15 43 16 24	134 125
λ Sagittarii	2.9	16 51	135
γ Sagittarii	3.1	16, 53	150
δ Sagittarii	2.8	17 4	148
ξ Sagittarii	3.6	17 9	125
φ Sagittarii	3.3	17 15	140,
π Sagittarii	3.0	17 21	125
σ Sagittarii	2·I	17 22	138
τ Sagittarii	3.4	17 40	142
ζ Sagittarii	2.7	17 46	148
ζ Capricorni	3.9	19 42	129
δ Capricorni	3.0	19 50	115
$\delta_{Aquarii}$	3.5	20 56	114
c ² Aquarii	3.8	21 21	126
α Piscis Australis β Ceti	1.3	21 43	149
Ь сеп ''' '''	2.2	22 49	119
	ļ		
' '		··	

1			
Star.	Mag.	L. S.T.	Az.
		h. m.	
Diania Annaton lia			
α Piscis Australis		0 3	211
δ Aquarii	3.5	0 44	246
c ² Aquarii	3.8	0 49	234
β Ceti	2.2	2 29	241
γ Eridani	3.2	5 50	251
ε Leporis	3.3	6 43	232
μ Leporis	3.3	7 3	246
β Leporis	3.0	7 10	236
α Leporis	2.7	7 20	242
ζ Canis Majoris	3.1	7 28	212
β Canis Majoris	2.0	8 10	242
ε Canis Majoris	1.6	8 12	215
22 Canis Majoris	3.7	8 20	218
δ Canis Majoris	2.0	8 34	223
α Canis Majoris	-1.6	8 35	245
η Canis Majoris	2.4	8 37	215
o ² Canis Majoris	3.1	8 38	229
ξ Argus	3.2	9 21	227
ρ Argus	2.9	9 41	228
ξ Hydræ	3.7	12 30	207
1 0	3.2	13 48	233
	2.8	14 4	244
	2.8		231
1 's ~ ·	3.1	14 10 14 20	246
			L
γ Hydræ	3.3	14 55	232
π Hydræ	3.2	15 31	223
γ Scorpii	3.4	16 32	226
π Scorpii	3.0	17 24	224
δ Scorpii	2.5	17 36	232
σ Scorpii	3.1	17 48	225
β¹Scorpii	2.9	17 49	238
τ Scorpii	2.9	17 52	218
α Scorpii	I·2	17 53	223
θ Ophiuchi		18 51	226
γ Sagittarii	3.1	19 9	210
δ Sagittarii	2.8	19.28	212
μ Sagittarii	4.0	19 54	235
λ Sagittarii	2.9	19 55	225
φ Sagittarii	3.3	20 7	220
ζ Sagittarii	2.7	20 8	212
σ Sagittarii	2·I	20 18	222
τ Sagittarii	3.4	20 24	218
ξ Sagittarii	3.6	20 37	235
π Sagittarii	3.0	20 49	235
ζ Capricorni	3.9	23 2	231
δ Capricorni	3.0	23 36	245
			ا

Star.	Mag.	L. S.T.	Az.
		h. m.	0
ζ Pegasi	3.6	0 21	301
α Pegasi	2.6	0 32	312
γ Pegasi	2.9	I 40	312
β Arietis	2.7	2 55	328
η Piscium	3.7	2 57	312
o Tauri	3.8	5 7	297
ε Tauri	3.6	5 37	324
γ Tauri	3.9	5 44	313
α Tauri	I.I	5 56 6 33	316
ζ Tauri	3.0		331
μ Geminorum	3.2	7 6 7 41	337
α Orionis γ Geminorum	1.2	_	294 316
γ Geminorum δ Geminorum	3.2	7 58 8 8	335
ξ Geminorum	3.4	8 18	307
β Canis Minoris	3.1	9 11	297
β Cancri	3.8	9 58	299
o Leonis	3.8	11 21	301
γ¹ Leonis	2.6	II 2I	328
α Leonis	1.3	11 42	306
δ Leonis	2.6	12 11	331
ρ Leonis	3.9	12 14	299
θ Leonis	3.4	12 37	315
β Leonis	2.2	13 15	312
ε Virginis	3.0	14 39	. 303
η Boötis	2.8	15 5	323
α Boötis	0.5	15 22	326
γ Serpentis β Herculis	3·9 2·8	17 20	315
'	3.8	17 23 17 29	325
γ Herculis κ Ophiuchi	3.4	18 39	299
α Herculis	3.2	18 43	311
α Ophiuchi	2·I	19 9	306
72 Ophiuchi	3.7	19 48	299
ζ Aquilæ	3.0	20 36	309
γ Aquilæ	2.8	21 26	301
α Aquilæ	0.9	21 34	297
α Delphini	3.9	22 4	314
ε Delphini	4.0	22 II	302
ε Pegasi	2.5	23 25	299
+			

, 				ı
Star.	Mag.	L. S.T.	Az.	
	-	h. m.	0	
η Piscium	3.7	0 0	46	ŀ
β Arietis	2.7	0 52	28	
o Tauri	3.8	I 35	61	
γ Tauri	3.9	2 50	44	
π^3 Orionis	3.3	2 56	65	
α Tauri	1.1	3 10	41	
ε Tauri	3.6	3 17 3 31	33	
γ Orionis	1.7		66	
α Orionis	1.5	4 3	64	
ζ Tauri	3.0	4 4 I	25	
ξ Geminorum	3.4	5 7 5 13	50	
γ Geminorum	1.9	5 13	4 ^I	
β Canis Minoris	3.1	5 38	61	ŀ
β Cancri	3.8	6 29	59	
$\zeta Hydræ$	3.2	6 52	65	
ζ Hydræ o Leonis	3.3		66	
α Leonis	3.8	7 56 8 29	57	
ρ Leonis	1.3	8 29 8 46	52	
γ¹ Leonis	3·9 2·6	9 17	59 28	
θ Leonis	3.4	9 47	43	
δ Leonis	2.6	IO 17	26	
β Leonis	2.2	10 18	45	l
ε Virginis	3.0	II 20	54	
η Boötis	2.8	12 42	34	
α Boötis	0.2	13 9	31	;
α Serpentis	2.8	13 51	65	
γ Serpentis	3.9	14 30	43	
х Ophiuchi	3.4	15 11	59	
γ Herculis	3.8	15 13	32	
β Herculis	2.8	15 40	22	
α Herculis	3.2	15 43	47	
α Ophiuchi	2.1	15 56	52	
72 Ophiuchi	3.7	16 20	59	
ζ Aquilæ	3.0	17 31	49	
γ Aquilæ	3.9	18 1 18 1	57 66	١
β Aquilæ α Aquilæ	" "	18 2	61	'
ε Delphini	4.0	18 49	56	1
α Delphini	3.9	19 12	44	l
ε Pegasi	2.2	19 57	59	
ζ Pegasi	3.6	20 56	57	1
α Pegasi	2.6	21 34	46	
ω Piscium	4.0	22 5	66	
γ Pegasi	2.9	22 41	46	
		-		ĺ
		1		1
14.5				1
	!	!	<u> </u>	J

Star.	Mag.	L. S.T.	Az.
	,		<u> </u>
Star. γ Eridani ε Leporis β Leporis β Canis Majoris γ Canis Majoris ο² Canis Majoris ε Canis Majoris ε Canis Majoris ε Canis Majoris ε Canis Majoris ε Canis Majoris γ Canis Majoris γ Argus ρ Argus ρ Argus γ Hydræ ε Corvi γ Hydræ γ Scorpii π Sagittarii γ Sagittarii γ Sagittarii π Sagittarii π Sagittarii π Sagittarii π Sagittarii π Sagittarii π Sagittarii π Sagittarii π Sagittarii γ Sagittarii η Sagittarii π Sagittarii η Sagittarii η Sagittarii η Sagittarii π Sagittarii η Sagittarii	Mng. 3.2 3.3 2.7 3.0 3.1 3.7 2.0 3.1 3.7 2.0 3.1 3.7 2.0 3.1 2.0 3.1 2.0 3.1 2.0 3.1 2.0 3.1 2.0 3.1 2.0 3.1 2.0 3.1 2.0 3.1 2.0 3.1 2.0 3.1 2.0 3.1 3.0 3.1 3.0 3.1 3.0 3.1 3.0 3.1 3.0 3.1 3.0 3.1 3.0 3.1 3.0 3.1 3.0 3.1 3.0 3.1 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	h. m. 1 56 3 18 3 36 3 37 4 26 5 19 5 31 5 32 5 33 6 7 6 24 7 43 10 21 10 21 10 21 10 47 11 30 12 29 14 11 14 20 14 40 14 51 15 5 15 39 16 22 16 47 16 58 17 16 58 17 17 18 17 35 17 40 19 39 21 19 21 37 22 47	Az. 0 107 126 116 122 116 145 129 139 135 142 143 131 150 125 127 126 135 132 126 120 134 133 135 140 132 123 147 133 145 123 147 133 145 123 137 135 123 137 135 124 146 117
		d)	

Star.	Mag.	L. S.T.	Az.	
Star. A Piscis Australis c² Aquarii	Mag. 1.3 3.8 2.2 3.3 3.0 2.7 3.1 2.6 3.7 2.9 3.7 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 3.6 3.9 3.9	L.S.T. h. m. o 9 o 51 2 31 5 52 6 46 7 13 7 22 7 34 8 12 8 25 8 38 8 41 8 42 9 37 9 44 12 37 13 51 14 58 15 35 16 36 17 28 17 39 17 51 17 52 17 57 17 57 18 55 19 34 19 56 19 59 20 11 20 23 20 29 20 40 20 52 23 5	Az. 214 236 243 253 234 215 244 218 221 225 231 217 229 204 230 235 246 233 234 225 228 226 234 240 227 225 220 228 213 215 227 223 215 237 227 223 215 227 233	ς α γω β η ο ε γας π γα γξ β β ες γο αδ ρθ β ε η α β γγα α α α α α α α α α α α α α α α α
		•		

ζ Pegasi 3.6 0. 18 303 α Pegasi 2.6 0. 28 314 γ Pegasi 2.9 1. 37 314 ω Piscium 4.0 1.45 294 β Arietis 2.7 2. 48 332 η Piscium 3.7 2. 54 314 ο Tauri 3.6 5. 31 327 γ Tauri 3.6 5. 31 327 γ Tauri 3.6 5. 31 327 γ Tauri 3.9 5. 40 316 α Tauri 3.7 7. 11 294 γ Orionis 1.7 7. 11 294 γ Orionis 1.7 7. 11 294 γ Geminorum 1.9 7. 53 319 ξ Geminorum 1.9 7. 53 319 ξ Geminorum 3.4 8. 15 310 β Canis Minoris 3.1 9. 8 299 β Cancri

Star.	Mag.	L. S.T.	Az.
η Piscium β Arietis ο Tauri γ Tauri α Tauri ε Tauri γ Orionis α Orionis β Geminorum γ Geminorum β Canis Minoris α Canis Minoris	3.7 2.7 3.8 3.9 3.3 1.1 3.6 1.7 1.2 3.4 1.9 3.1	h. m. 0 4 1 0 1 37 2 54 2 58 3 15 3 24 3 33 4 5 5 11 5 18 5 40 5 45	63 39 42 63 39 30 64 62 48 38
β Cancri ε Hydræ ζ Hydræ ο Leonis ρ Leonis γ Leonis β Leonis β Leonis κ Virginis η Boötis α Serpentis γ Serpentis	3·8 3·5 3·3 3·8 1·3 3·9 2·6 3·4 2·2 3·0 2·8 0·2 2·8	6 31 6 55 7 3 7 58 8 32 8 49 9 25 9 51 10 22 11 23 12 48 13 16	57 63 64 55 50 56 24 40 43 52 31 27 63
γ Serpentis κ Ophiuchi γ Herculis α Herculis α Ophiuchi 72 Ophiuchi ζ Aquilæ β Aquilæ α Aquilæ γ Aquilæ γ Aquilæ γ Aquilæ ε Delphini α Delphini ε Pegasi	3.9 3.4 3.8 3.5 2.1 3.7 3.0 3.9 0.9 2.8 4.0 3.9	14 34 15 13 15 20 15 47 15 59 16 22 17 34 18 3 18 4 18 52 19 16 19 59	40 57 28 44 49 57 46 64 59 55 53 41
ζ Pegasi α Pegasi ω Piscium γ Pegasi	3·6 2·6 4·0 2·9	20 59 21 38 22 7 22 45	55 44 64 44

	1		
Star.	Mag.	L.S.T.	Az.
		h. m.	-
α Piscis Australis	1.3	0 14	217
c² Aquarii	3.8	0 54	238
β Ceti	2.2	2 33	245
υ ⁴ Eridani	3.6	5 12	204
γ Eridani	3.2	5 53	254
a Columba	2.7	6 33	204
ε Leporis	3.3	6 49	236
β Leporis	3.0	7 15 7 24	240
α Leporis	2.7	7 24	246
ζ Canis Majoris	3.1	7 39	217
β Canis Majoris	2.0	8 14	246
ε Canis Majoris	1.6	8 22	221
22 Canis Majoris	3.7	8 29	223
δ Canis Majoris	2.0	· 8 42	227
o ² Canis Majoris	3.1	8 44	233
η Canis Majoris	2.4	8 47	220
ξ Argus	3.2	9 28	231
a Mali	3.7	9 45	208
ρ Argus ξ Hydræ	2.9	9 47	233
	3.7	12 44	213
ε Corvi	3.2	13 54	237
β Corvi	2.8	14 16	235
γ Hydræ	3.3	15 1	236
π Hydræ	3.2	15 39	227
γ Scorpii	3.4	16 40	230
π Scorpii	3.0	17 32	228
ε Scorpii	2.4	17 40	203
δ Scorpii	2.5	17 42	236
β¹Scorpii	2.9	17 54	242
σ Scorpii	3.1	17 56	229
α Scorpii	1.5	18 1	
τ Scorpii	2.9		223
θ Ophiuchi		_	231 216
γ Sagittarii δ Sagittarii	1 ~	19 21	218
δ Sagittarii		19 39	239
μ Sagittarii λ Sagittarii	2.9	20 2	229
	3.3	20 15	225
φ Sagittarii ζ Sagittarii	2.7	20 19	217
σ Sagittarii	2·I	20 27	227
τ Sagittarii	3.4	20 33	223
ξ Sagittarii	3.6	20 43	239
π Sagittarii	3.0	20 55	239
ζ Capricorni	3.9	23 8	235
• entr		_	, , ,
			+
			- 1
•			
A 1		i l	

· · · · · · · · · · · · · · · · · · ·			
Star.	Mag.	L.S.T.	Az.
		b. m.	-
۲ D:			
ζ Pegasi	3.6	0 15	305
α Pegasi	2.6	0 24	316
γ Pegasi	2.9	I 33	316
ω Piscium	4.0	I 43	296
β Arietis	2.7	2 40	336
η Piscium	3.7	2 50	317
o Tauri	3.8	5 3	301
ε Tauri	3.6	5 24	330
γ Tauri	3.9	5 36	318
α Tauri	1.1	5 47	321
π^3 Orionis	3.3	6 32	297
γ Orionis	1.7	7 9	296
α Orionis	I • 2	7 37	298
γ Geminorum	1,9	7 48	322
ξ Geminorum	3.4	8 11	312
β Canis Minoris	3.1	96	30 r
a Canis Minoris	0.5	9 6	294
β Cancri	3⋅8	9 53	303
ε Hydræ	3.2	10 29	297
ζ Hydræ	3.3	10 39	296
γ¹ Leonis	2.6	11 5	336
o Leonis	3.8	11 16	305
α Leonis	1.3	11 36.	310
ρ Leonis	3.9	12 9	304
0 Leonis	3.4	12 29	320
β Leonis	2.2	13 8	317
ε Virginis	3.0	14 33	308
η Boötis	2.8	14 54	329
α Boötis	0.2	15 8	333
γ Serpentis	3.9	17 12	320
γ Herculis	3.8	17 16	332
α Serpentis	2.8	17 27	297
× Ophiuchi	3.4	18 35	303
α Herculis	3.2	18 35	316
α Ophiuchi	2·I	19 3	311
72 Ophiuchi	3.7	19 44	303
ζ Aquilæ	3.0	20 30	314
γ Aquilæ	2.8	21 20	305
α Aquilæ	0.9	21.30	301
β Aquilæ	3.9	21 39	296
α Delphini	3.9	21 56	319
ε Delphini	4.0	22 6	307
ε Pegasi	2.5	23 21	303
e rogasi	~ 3	25 21	, ⁵

RANT SE. QUADRANT

	Star.	Mag.	L. S.T.	Az.	
ļ			h. m.	•	
	η Piscium ο Tauri γ Tauri α Tauri ε Tauri γ Orionis α Orionis α Orionis β Geminorum γ Geminorum γ Geminorum γ Genis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Leonis ε Hydræ ο Leonis ρ Leonis θ Leonis θ Leonis	3·7 3·8 3·9 3·3 1·1 3·6 1·7 1·2 3·4 1·9 3·1 0·5 3·8 3·9 3·3 3·9 3·4	9 1 40 2 59 3 20 3 31 3 35 4 7 5 42 5 47 6 57 7 8 1 8 35 8 52 9 56	40 57 39 61 36 62 60 46 35 57 64 55 61 62 53 47 54	
	β Leonis ε Virginis η Boötis α Boōtis α Serpentis ε Serpentis γ Serpentis γ Ophiuchi α Ophiuchi α Ophiuchi α Ophiuchi α Aquilæ γ Aquilæ γ Aquilæ γ Aquilæ γ Pegasi α Pegasi α Pegasi α Pegasi γ Pegasi γ Pegasi γ Pegasi γ Pegasi γ Pegasi	2·2 3·0 2·8 0·2 2·8 3·9 3·4 3·9 3·9 2·5 3·6 4·0 2·9	10 27 11 26 12 56 13 24 13 55 13 58 14 39 15 16 15 27 15 49 15 51 16 3 16 25 17 38 18 5 18 7 18 55 19 21 20 2 21 2 21 42 22 9 22 50	40 50 27 23 61 66 37 55 66 42 47 55 44 62 57 53 51 62 41	

γ Eridani 3.2 1 54 104 ν⁴ Eridani 3.6 3 10 152 ε Leporis 3.3 3 12 122 β Leporis 3.0 3 32 118 α Columbæ 2.7 4 33 153 ζ Canis Majoris 3.1 4 50 140 ο² Canis Majoris 3.7 5 23 134 ε Canis Majoris 1.6 5 24 137 δ Canis Majoris 2.0 5 25 131 ζ Canis Majoris 2.4 5 51 138 ξ Argus 2.9 6 18 127 ρ Argus 2.9 6 18 125 a Mali 3.7 7 28 149 ξ Hydræ 3.7 10 8 144 ε Corvi 3.2 10 16 121 β Corvi 3.2 10 16 121 γ Hydræ 3.3 11 25 122 π Hydræ 3.3 11 25 122 γ Scorpii 2.5 14 5 122 β Scorpii 2.9 14 6	Star.	Mag.	L. S.T.	Az.
	v4 Eridani E Leporis A Columbæ Canis Majoris c2 Canis Majoris c2 Canis Majoris E Canis Majoris Canis Majoris Canis Majoris Canis Majoris Argus	3.6 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7	1 54 3 10 3 12 3 32 4 33 4 50 5 13 5 5 24 5 5 5 6 7 8 10 10 25 12 22 13 14 4 56 14 14 33 14 4 56 16 49 17 1	104 152 122 118 153 140 125 134 137 131 138 127 125 149 144 121 123 122 131 128 122 136 130 135 127 153 119 141 129 140 119 132 131 119 154 130 123 120 140

Star.	Mag.	L.S.T.	Az.
	<u></u>	h. m.	0
α Piscis Australis	1.3	0 19	220
c² Aquarii	3.8	0 56	240
β Ceti	2.2	2 35	247
υ ⁴ Eridani	3.6	5 20	208
γ Eridani	3.2	5 54	256
α Columbæ	2.7	6 41	207
ε Leporis	3.3	6 52	238
β Leporis	3.0	7 18	242
ζ Canis Majoris	3·I	7 44	220
ε Canis Majoris	1.6	8 26 8 33	223
22 Canis Majoris δ Canis Majoris	3·7 2·0	8 33 8 45	229
o ² Canis Majoris	3.1	8 47	235
η Canis Majoris	2.4	8 51	222
ξ Argus	3.2	9 31	233
ρ Argus	2.9	9 50	235
a Mali	3.7	9 52	211
ξ Hydræ	3.7	12 50	216
ε Corvi	3.2	13 56	239
β Corvi	2.8	14 19	237
γ Hydræ	3.3	15 3	238.
π Hydræ	3.2	15 42	229
γ Scorpii	3.4	16 43	232
π Scorpii	3.0	17 36	230
δ Scorpii	2.5	17 45	238
ε Scorpii	2.4	17 49 17 56	207 244
β¹Scorpii σ Scorpii	3·I	17 59	232
α Scorpii	I·2	18 5	230
τ Scorpii	2.9	18 6	225
θ Ophiuchi	3.4	19 1	233
ε Sagittarii	2.0	19 21	206
~ ~ **	3.1	19 26	219
δ Sagittarii	2.8	19 43	220
μ Sagittarii λ Sagittarii	4.0	20 I	241
	2.9	20 6	231
φ Sagittarii ζ Sagittarii	3.3	20 19	228
ζ Sagittarii	2.7	20 24	220 229
σ Sagittarii	2·I	20 30 20 37	229
τ Sagittarii ξ Sagittarii	3·4 3·6	20 37	24I
	3.0	20 57	24I
π Sagittarii ζ Capricorni	3.9	23 11	237
2 021		-	,
3			
11 1-			

Star.	Mag.	L.S.T.	Az.
		h. m.	•
ζ Pegasi	3.6	0 12	307
α Pegasi	2.6	0 20	319
γ Pegasi	2.9	I 28	319
ω Piscium	4.0	141	298
η Piscium	3.7	2 45	320
o Tauri	3.8	5 0	303
ε Tauri	3.6	5 17	334
γ Tauri	3.9	5 31	321
α Tauri	I.I	5 42	324
π^3 Orionis	3.3	6 30	299
γ Orionis	1.7	7 7	298
α Orionis	I • 2	7 35	300
γ Geminorum	1.9	7 43	325
ξ Geminorum	3.4	8 8	314
β Canis Minoris	3.1	9 4	303
α Canis Minoris	0.2	9 23	296
β Cancri	3-8	9 50	305
ε Hydræ	3.2	10 27	299
ζ Hydræ	3.3	10 37	298
o Leonis	3.8	11 13	307
α Leonis	1.3	II 33	313
ρ Leonis	3.9	12 6	306
θ Leonis	3.4	12 24	323
β Leonis	2.2	13 3	320
ε Virginis η Boötis	3·0 2·8	14 30 14 46	310
' To	0.2	14 46 15 0	333 337
~	3.9	17 7	323
γ Serpentis γ Herculis	3.8	17 9	335
α Serpentis	2.8	17 25	299
ε Serpentis	3.8	17 36	294
α Herculis	3.2	18 31	318
х Ophiuchi	3.4	18 32	305
α Ophiuchi	2·I	18 59	313
β Ophiuchi	2.9	19 29	294
72 Ophiuchi	3.7	19 41	305
ζ Aquilæ	3.0	20 26	316
γ Aquilæ	2.8	21 17	307
α Aquilæ	0.9	21 28	303
β Aquilæ	3.9	21 37	298
α Delphini	3.9	21 51	322
ε Delphini	4.0	22 3	309
ε Pegasi	2.2	23 18	305
			

Star.	Mag.	L. S.T.	Az.	
		h. m.	0	
η Piscium α Ceti	3·7 2·8	0 14 1 9	37 66	
o Tauri	3.8	I 42	54	
π^3 Orionis	3.3	3 2	5 9	
γ Tauri	3.9	3 4	36	
α Tauri	1.1	3 26	32	
γ Orionis	1.7	3 37	60	
α Orionis	1.5	4 10	58	
ξ Geminorum γ Geminorum	3.4	5 18	43	
γ Geminorum β Canis Minoris	3.1	5 29 5 45	. 32	
α Canis Minoris	0.5	5 49	55 62	
β Cancri	3.8	5 49 6 37	53	
ε Hydræ	3.2	6 59	59	
ζ Hydræ	3.3	7 7	60	
o Leonis	3.8	8 5	50	
α Leonis ρ Leonis	1.3	8 39	45	l.
θ Leonis	3.4	8 55 10 2	52 34	
β Leonis	2.2	10 32	37	l
δ Virginis	3.7	11 2	66	l
ε Virginis	3.0	11 29	48	
η Bootis	2.8	13 5	22	
α Serpentis	2.8	13 57	59	
ε Serpentis	3.8	14 0	64	
γ Serpentis κ Ophiuchi	3.4	14 45	34 52	
β Ophiuchi	1	15 51	64	
α Herculis	3.5	15 56	39	
α Ophiuchi	2.1	16 7	44	
72 Ophiuchi	3.7	16 28	52	ĺ
ζ Aquilæ	3.0	17 43	41	
β Aquilæ α Aquilæ	3.9	18 7	60	
α Aquilæ γ Aquilæ	2.8	18 10	55 50	
ε Delphini	4.0	18 59	49	l
α Delphini	3.9	19 27	35	
ε Pegasi	2.5	20 5	52	
ζ Pegasi	3.6	21 5	50	
α Pegasi	2.6	21 47	38	
ω Piscium γ Pegasi	4·0 2·9	22 11	60 38	
1 regust	29	~~ 33	"	
				l
		1		l
			,	
į.	i	1		

γ Eridani 3.2 1.53 102 υ ⁴ Eridani 3.6 3.3 149 ε Leporis 3.3 3.0 116 α Columbæ 2.7 4.26 149 ζ Canis Majoris 3.1 4.45 138 β Columbæ 3.2 4.49 155 ο² Canis Majoris 1.6 5.19 134 ε Canis Majoris 2.0 5.21 128 η Canis Majoris 2.4 5.46 135 ξ Argus 2.9 6.15 123 η Canis Majoris 2.4 5.46 135 ξ Argus 2.9 6.15 123 η Canis Majoris 2.4 5.46 135 ξ Argus 2.9 6.15 123 η Canis Majoris 2.4 5.46 135 ξ Argus 2.9 6.15 123 η Canis Majoris 2.4 5.46 135 ξ Argus 2.9 6.15 123 η Laguaria 3.7 7.21 146 ξ Hydræ 3.7

Star. Mag. I.S.T. Az.				
α Piscis Australis 1·3 0 24 222 c² Aquarii 3·8 0 58 242 β Ceti 2·2 2 36 249 υ⁴ Eridani 3·6 5 27 211 γ Eridani 3·2 5 55 258 β Columbæ 2·7 6 48 211 ε Leporis 3·3 6 54 240 β Leporis 3·0 7 20 244 ζ Canis Majoris 3·1 7 49 222 ε Canis Majoris 3·1 7 49 222 ε Canis Majoris 3·1 8 49 237 δ Canis Majoris 3·1 8 49 237 δ Canis Majoris 2·0 8 49 232 γ Canis Majoris 2·0 8 49 232 γ Canis Majoris 2·0 8 49 232 γ Canis Majoris 2·0 8 56 225 ξ Argus 3·1 2·9 9 53 237 α Mali 3·7 9 59 214 ξ Hydræ 3·7 12 55 219 ε Corvi	Star.	Mag.	L. S.T.	Az.
c² Aquarii 3.8 0 58 242 β Ceti 2.2 2 36 249 υ⁴ Eridani 3.6 5 27 211 γ Eridani 3.2 5 55 258 β Columbæ 2.7 6 48 211 ε Leporis 3.3 6 54 240 β Leporis 3.0 7 20 244 ζ Canis Majoris 3.1 7 49 222 ε Canis Majoris 1.6 8 31 226 22 Canis Majoris 3.7 8 37 228 ο² Canis Majoris 2.0 8 49 232 η Canis Majoris 2.4 8 56 225 ξ Argus 3.5 9 34 235 ρ Argus 2.9 9 53 237 a Mali 3.7 9 59 214 ξ Hydræ 3.7 12 55 219 ε Corvi 3.2 13 58 240 β Corvi 3.2 <td></td> <td> </td> <td>h. m.</td> <td> </td>			h. m.	
β Celi 2.2 2 36 249 υ4 Eridani 3.6 5 27 211 γ Eridani 3.2 5 55 258 β Columbæ 2.7 6 48 211 ε Leporis 3.3 6 54 240 β Leporis 3.0 7 20 244 ζ Canis Majoris 3.1 7 49 222 ε Canis Majoris 1.6 8 31 226 22 Canis Majoris 3.7 8 37 228 ο² Canis Majoris 2.0 8 49 232 η Canis Majoris 2.4 8 56 225 ξ Argus 3.5 9 34 235 ρ Argus 2.9 9 53 237 a Mali 3.7 9 59 214 ξ Hydræ 3.7 12 55 219 ε Corvi 3.2 13 58 240 β Centauri 2.3 14 59 204 γ Hydræ <td>α Piscis Australis</td> <td>1.3</td> <td>0 24</td> <td>222</td>	α Piscis Australis	1.3	0 24	222
v ⁴ Eridani 3.2 5.55 258 β Columbæ 3.2 6.47 205 α Columbæ 2.7 6.48 211 ε Leporis 3.3 6.54 240 β Leporis 3.0 7.20 244 ζ Canis Majoris 3.1 7.49 222 ε Canis Majoris 3.7 8.37 228 ο² Canis Majoris 3.1 8.49 237 δ Canis Majoris 2.0 8.49 232 η Canis Majoris 2.4 8.56 225 ξ Argus 3.5 9.34 235 ρ Argus 2.9 9.53 237 a Mali 3.7 9.59 214 ξ Hydræ 3.7 12.55 219 ε Corvi 3.2 13.58 240 β Corvi 3.2 13.58 240 γ Hydræ 3.3 15.5 240 η Hydræ 3.3 15.5 240 η Hydræ 3.3 15.46 232 γ Scorpii 3.4 17.47	c² Aquarii		0 58	
γ Eridani 3.2 5.55 258 β Columbæ 3.2 6.47 205 α Columbæ 2.7 6.48 211 ε Leporis 3.3 6.54 240 β Leporis 3.0 7.20 244 ζ Canis Majoris 3.1 7.49 222 ε Canis Majoris 1.6 8.31 226 22 Canis Majoris 3.7 8.37 228 ο² Canis Majoris 2.0 8.49 232 η Canis Majoris 2.0 8.49 232 η Canis Majoris 2.4 8.56 225 ξ Argus 2.9 9.53 237 α Argus 2.9 9.53 237 α Mali 3.7 9.59 214 ξ Hydræ 3.7 12.55 219 ε Corvi 3.3 15.5 240 η Hydræ 3.3 15.5 240 η Hydræ 3.3 15.5 240 η Scorpii 3.0 17.39 232 η Scorpii 3.0 17.39 </td <td>β Celi</td> <td></td> <td>1</td> <td></td>	β Celi		1	
Golumbæ			5 27	
α Columbæ 2·7 6 48 211 ε Leporis 3·3 6 54 240 β Leporis 3·0 7 20 244 ζ Canis Majoris 3·1 7 49 222 ε Canis Majoris 3·7 8 31 226 22 Canis Majoris 3·1 8 49 237 δ Canis Majoris 2·0 8 49 232 η Canis Majoris 2·4 8 56 225 ξ Argus 3·5 9 34 235 ρ Argus 2·9 9 53 237 a Mali 3·7 9 59 214 ξ Hydræ 3·7 12 55 219 ε Corvi 3·2 13 58 240 β Corvi 2·8 14 21 239 β Corvi 2·8 14 21 239 γ Scorpii 3·3 15 5 240 η Hydræ <td></td> <td></td> <td></td> <td></td>				
E Leporis 3·3 6 54 240 β Leporis 3·0 7 20 244 ζ Canis Majoris 3·1 7 49 222 ε Canis Majoris 1·6 8 31 226 22 Canis Majoris 3·7 8 37 228 ο² Canis Majoris 3·1 8 49 237 δ Canis Majoris 2·0 8 49 232 η Canis Majoris 2·4 8 56 225 ξ Argus 3·5 9 34 235 ρ Argus 2·9 9 53 237 α Mali 3·7 9 59 214 ξ Hydræ 3·7 12 55 219 ε Corvi 2·8 14 21 239 θ Centauri 2·3 14 59 204 γ Hydræ 3·3 15 5 240 π Hydræ 3·5 15 46 232 γ Scorpii 3·4 16 46 235 π Scorpii 3·4 16 46 235 π Scorpii 3·1 18 2 234 α Scorpii 2·4 17 56 210 σ Scorpii 2·4 17 56 210 σ Scorpii 2·9 18 10 228 θ Ophiuchi 3·1 18 2 234 α Scorpii 2·9 18 10 228 θ Ophiuchi 3·1 19 31 221 δ Sagittarii 2·0 19 29 210 γ Sagittarii 2·0 19 29 210 γ Sagittarii 2·1 2·2 33 α Sagittarii 2·2 20 20 223 σ Sagittarii 2·2 20 20 223 σ Sagittarii 2·2 20 20 223 σ Sagittarii 2·2 20 20 222 σ Sagittarii 2·2 20 20 222 σ Sagittarii 2·1 20 33 231 τ Sagittarii 2·1 20 33 231 τ Sagittarii 2·1 20 33 231 τ Sagittarii 2·1 20 33 231 τ Sagittarii 3·4 20 41 228 ξ Sagittarii 3·6 20 47 243 π Sagittarii 3·6 20 47 243 π Sagittarii 3·6 20 47 243 π Sagittarii 3·6 20 47 243				
β Leporis 3.0 7 20 244 ζ Canis Majoris 3.1 7 49 222 ε Canis Majoris 1.6 8 31 226 22 Canis Majoris 3.7 8 37 228 ο² Canis Majoris 2.0 8 49 232 η Canis Majoris 2.4 8 56 225 ξ Argus 3.5 9 34 235 ρ Argus 2.9 9 53 237 a Mali 3.7 9 59 214 ξ Hydræ 3.7 12 55 219 ε Corvi 2.8 14 21 239 θ Centauri 2.3 14 59 204 γ Hydræ 3.5 15 46 232 γ Scorpii 3.4 16 46 235 π Scorpii 3.4 16 46 235 π Scorpii 2.5 17 47 240 ε Scorpii 2.9 18 10 228 θ Ophiuchi <t< td=""><td></td><td></td><td></td><td></td></t<>				
Canis Majoris ε Canis Majoris 1.6 8 31 226 22 Canis Majoris 3.7 8 37 228 02 Canis Majoris 3.1 8 49 237 8 Canis Majoris 2.0 8 49 232 η Canis Majoris 2.0 8 49 232 η Canis Majoris 2.4 8 56 225 ξ Argus 3.5 9 34 235 ρ Argus 3.7 9 59 214 ξ Hydræ 3.7 12 55 219 ε Corvi 3.2 13 58 240 β Corvi 2.8 14 21 239 θ Centauri 2.3 14 59 204 γ Hydræ 3.5 15 46 232 γ Scorpii 3.4 16 46 235 π Scorpii 3.7 12 55 240 π Hydræ 3.7 12 55 240 π Hydræ 3.7 12 55 240 π Hydræ 3.7 12 55 240 π Hydræ 3.7 12 55 240 π Hydræ 3.7 12 55 240 π Hydræ 3.7 12 55 240 η Hydræ 3.7 15 46 232 γ Scorpii 3.7 16 46 235 π Scorpii 3.7 17 39 232 δ Scorpii 3.7 18 2 324 ε Scorpii 3.1 18 2 324 ε Scorpii 3.1 18 2 234 α Scorpii 3.1 19 31 221 δ Sagittarii 2.9 19 48 223 μ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 γ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 9 224 σ Sagittarii 2.9 20 9 225 σ Sagittarii 2.9 20 9 224 σ Sagittarii 2.9 20 9 223 σ Sagittarii 2.9 20 47 243 π Sagittarii 3.6 20 47 243				
E Canis Majoris 22 Canis Majoris 3.7 8 37 228 22 Canis Majoris 3.1 8 49 237 8 Canis Majoris 2.0 8 49 232 7 Canis Majoris 2.4 8 56 225 E Argus 2.9 2.9 3.5 2.9 3.5 2.9 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3	7 Conis Majoris			
22 Canis Majoris		1.6	8 21	
o² Canis Majoris 3·1 8 49 237 δ Canis Majoris 2·0 8 49 232 η Canis Majoris 2·4 8 56 225 ξ Argus 3·5 9 34 235 ρ Argus 2·9 9 53 237 a Mali 3·7 9 59 214 ξ Hydræ 3·7 12 55 219 ε Corvi 3·2 13 58 240 β Corvi 2·8 14 21 239 θ Centauri 2·3 14 59 204 γ Hydræ 3·3 15 5 240 η Hydræ 3·5 15 46 232 γ Scorpii 3·4 16 46 235 η Scorpii 3·0 17 39 232 δ Scorpii 2·5 17 47 240 ε Scorpii 2·4 17 56 210 σ Scorpii 3·1 18 2 234 α				
8 Canis Majoris η Canis Majoris ξ Argus 3.5 9 34 235 ρ Argus 2.9 9 53 237 a Mali 3.7 9 59 214 ξ Hydræ 3.7 12 55 219 ε Corvi 2.8 14 21 239 θ Centauri 2.3 γ Hydræ 3.3 15 5 240 η Hydræ 3.5 γ Scorpii 3.6 ε Scorpii 3.7 12 55 219 ε Corvi 2.8 14 21 239 θ Centauri 2.3 14 59 204 γ Hydræ 3.5 15 46 232 γ Scorpii 3.6 ε Scorpii 3.7 16 46 235 π Scorpii 3.7 17 39 232 δ Scorpii 3.9 17 39 232 δ Scorpii 2.9 18 10 228 θ Ophiuchi 3.1 18 2 234 α Scorpii 1.2 18 8 232 τ Scorpii 2.9 18 10 228 θ Ophiuchi 3.1 19 31 221 δ Sagittarii 2.0 19 29 210 γ Sagittarii 2.0 19 29 210 γ Sagittarii 2.0 3.1 δ Sagittarii 2.0 3.1 δ Sagittarii 2.0 3.2 3.1 δ Sagittarii 2.0 3.2 3.3 ζ Sagittarii 2.9 2.0 2.23 α Sagittarii 2.9 2.0 2.23 α Sagittarii 2.9 2.0 2.23 α Sagittarii 2.9 2.0 2.23 α Sagittarii 2.9 2.0 2.23 α Sagittarii 3.4 2.0 4.1 2.28 ξ Sagittarii 3.6 2.0 4.7 2.43 π Sagittarii 3.6 2.0 4.7 2.43 π Sagittarii 3.6 2.0 4.7 2.43 π Sagittarii 3.6 2.0 4.7 2.43 π Sagittarii 3.6 2.0 2.7 2.0 2.9 2.43	o ² Canis Majoris			
η Canis Majoris 2·4 8 56 225 ξ Argus 3·5 9 34 235 ρ Argus 2·9 9 53 237 a Mali 3·7 9 59 214 ξ Hydræ 3·7 12 55 219 ε Corvi 3·2 13 58 240 β Corvi 2·8 14 21 239 θ Centauri 2·3 14 59 204 γ Hydræ 3·3 15 5 240 π Hydræ 3·5 15 46 232 γ Scorpii 3·4 16 46 235 π Scorpii 3·0 17 39 232 δ Scorpii 2·5 17 47 240 ε Scorpii 2·4 17 56 210 σ Scorpii 3·1 18 2 234 α Scorpii 1·2 18 8 232 τ Scorpii 1·2 18 9 223 </td <td></td> <td></td> <td>_ ' '</td> <td></td>			_ ' '	
ξ Argus 3·5 9 34 235 ρ Argus 2·9 9 53 237 a Mali 3·7 9 59 214 ξ Hydræ 3·7 12 55 219 ε Corvi 3·2 13 58 240 β Corvi 2·8 14 21 239 θ Centauri 2·3 14 59 204 γ Hydræ 3·3 15 5 240 π Hydræ 3·5 15 46 232 γ Scorpii 3·4 16 46 235 π Scorpii 3·0 17 39 232 δ Scorpii 2·5 17 47 240 ε Scorpii 2·4 17 56 210 σ Scorpii 3·1 18 2 234 α Scorpii 1·2 18 8 232 τ Scorpii 3·1 19 4 235 ε Sagittarii	η Canis Majoris	2.4		
ρ Argus 2·9 9 53 237 a Mali 3·7 9 59 214 ξ Hydræ 3·7 12 55 219 ε Corvi 3·2 13 58 240 β Corvi 2·8 14 21 239 θ Cenlauri 2·3 14 59 204 γ Hydræ 3·5 15 46 232 γ Scorpii 3·4 16 46 235 π Scorpii 3·4 16 46 235 π Scorpii 2·5 17 47 240 ε Scorpii 2·4 17 56 210 σ Scorpii 2·4 17 56 210 σ Scorpii 1·2 18 8 232 τ Scorpii 1·2 18 8 232 τ Scorpii 1·2 18 8 232 τ Scorpii 1·2 18 10 228 θ Ophiuchi 3·4 19 4	ξ Argus			235
ξ Hydræ 3·7 12 55 219 ε Corvi 3·2 13 58 240 β Corvi 2·8 14 21 239 θ Centauri 2·3 14 59 204 γ Hydræ 3·3 15 5 240 π Hydræ 3·5 15 46 232 γ Scorpii 3·4 16 46 235 π Scorpii 3·0 17 39 232 δ Scorpii 2·5 17 47 240 ε Scorpii 2·4 17 56 210 σ Scorpii 3·1 18 2 234 α Scorpii 1·2 18 8 232 τ Scorpii 1·2 18 8 232 τ Scorpii 1·2 18 8 232 τ Scorpii 1·2 18 8 232 τ Scorpii 1·2 18 9 223 θ Ophiuchi 3·4 19 4	ρ Argus	2.9	9 53	
E Corvi 3.2 13 58 240 β Corvi 2.8 14 21 239 θ Centauri 2.3 14 59 204 γ Hydræ 3.3 15 5 240 π Hydræ 3.5 15 46 232 γ Scorpii 3.4 16 46 235 π Scorpii 2.5 17 47 240 ε Scorpii 2.4 17 56 210 σ Scorpii 3.1 18 2 234 α Scorpii 1.2 18 8 232 τ Scorpii 1.2 18 8 232 τ Scorpii 2.9 18 10 228 θ Ophiuchi 3.4 19 4 235 ε Sagittarii 2.0 19 29 210 γ Sagittarii 2.8 19 48 223 μ Sagittarii 2.8 19 48 223 μ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 ς Sagittarii 2.9 20 9 233 ς Sagittarii 2.9 20 9 222 σ Sagittarii 2.7 20 29 222 σ Sagittarii 2.7 20 29 222 σ Sagittarii 2.1 20 33 231 τ Sagittarii 3.4 20 41 228 ξ Sagittarii 3.6 20 47 243 π Sagittarii 3.6 20 47 243 π Sagittarii 3.6 20 47 243			9 59	
β Corvi 2.8 14 21 239 θ Centauri 2.3 14 59 204 γ Hydræ 3.3 15 5 240 π Hydræ 3.5 15 46 232 γ Scorpii 3.4 16 46 235 π Scorpii 2.5 17 47 240 ε Scorpii 2.4 17 56 210 σ Scorpii 3.1 18 2 234 α Scorpii 1.2 18 8 232 τ Scorpii 1.2 18 8 232 τ Scorpii 2.9 18 10 228 θ Ophiuchi 3.4 19 4 235 ε Sagittarii 2.0 19 29 210 γ Sagittarii 2.0 19 29 210 γ Sagittarii 2.0 19 29 221 γ Sagittarii 2.0 2 3 23 γ Sagittarii 2.9				
θ Centauri 2·3 14 59 204 γ Hydræ 3·3 15 5 240 π Hydræ 3·5 15 46 232 γ Scorpii 3·4 16 46 235 π Scorpii 3·0 17 39 232 δ Scorpii 2·5 17 47 240 ε Scorpii 2·4 17 56 210 σ Scorpii 3·1 18 2 234 α Scorpii 1·2 18 8 232 τ Scorpii 2·9 18 10 228 θ Ophiuchi 3·4 19 4 235 ε Sagittarii 2·0 19 29 210 γ Sagittarii 2·8 19 48 223 μ Sagittarii 2·9 20 9 233 φ Sagittarii 2·9 20 9 233 φ Sagittarii 2·7 20 29 222 σ Sagittar				
γ Hydræ 3·3 15 5 240 π Hydræ 3·5 15 46 232 γ Scorpii 3·4 16 46 235 π Scorpii 3·0 17 39 232 δ Scorpii 2·5 17 47 240 ε Scorpii 2·4 17 56 210 σ Scorpii 3·1 18 2 234 α Scorpii 1·2 18 8 232 τ Scorpii 1·2 18 8 232 τ Scorpii 2·9 18 10 228 θ Ophiuchi 3·4 19 4 235 ε Sagittarii 2·0 19 29 210 γ Sagittarii 2·8 19 48 223 μ Sagittarii 2·9 20 9 233 σ Sagittarii 2·7 20 29			14 21	
π Hydræ 3·5 15 46 232 γ Scorpii 3·4 16 46 235 π Scorpii 3·0 17 39 232 δ Scorpii 2·5 17 47 240 ε Scorpii 2·4 17 56 210 σ Scorpii 3·1 18 2 234 α Scorpii 1·2 18 8 232 τ Scorpii 1·2 18 8 232 τ Scorpii 2·9 18 10 228 θ Ophiuchi 2·9 18 10 228 θ Ophiuchi 2·0 19 29 210 γ Sagittarii 2·8 19 48 223 μ Sagittarii 2·9 20 9 233 φ Sagittarii 2·9 20 9 233 φ Sagittarii 2·7 20 29 222 σ Sagittarii <td< td=""><td></td><td></td><td></td><td></td></td<>				
γ Scorpii 3.4 16 46 235 π Scorpii 3.0 17 39 232 δ Scorpii 2.5 17 47 240 ε Scorpii 2.4 17 56 210 σ Scorpii 3.1 18 2 234 α Scorpii 1.2 18 8 232 τ Scorpii 2.9 18 10 228 θ Ophiuchi 3.4 19 4 235 ε Sagittarii 2.0 19 29 210 γ Sagittarii 3.1 19 31 221 δ Sagittarii 2.8 19 48 223 μ Sagittarii 2.8 19 48 223 μ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 σ Sagittarii 2.7 20 29 222 σ Sagittarii 2.7 20 29 222 σ Sagittarii 2.1 20 33 231 τ Sagittarii 3.4 20 41 228 ξ Sagittarii 3.6 20 47 243 π Sagittarii 3.6 20 47 243 π Sagittarii 3.0 20 59 243			15 5	
π Scorpii 3.0 17 39 232 δ Scorpii 2.5 17 47 240 ε Scorpii 2.4 17 56 210 σ Scorpii 3.1 18 2 234 α Scorpii 1.2 18 8 232 τ Scorpii 2.9 18 10 228 θ Ophiuchi 3.4 19 4 235 ε Sagittarii 2.0 19 29 210 γ Sagittarii 3.1 19 31 221 δ Sagittarii 2.8 19 48 223 μ Sagittarii 2.8 19 48 223 μ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 σ Sagittarii 2.7 20 29 222 σ Sagittarii 2.7 20 29 222 σ Sagittarii 2.1 20 33 231 τ Sagittarii 3.4 20 41 228 ξ Sagittarii 3.6 20 47 243 π Sagittarii 3.0 20 59 243	I ~ ' ''			
δ Scorpii 2.5 17 47 240 ε Scorpii 2.4 17 56 210 σ Scorpii 3.1 18 2 234 α Scorpii 1.2 18 8 232 τ Scorpii 2.9 18 10 228 θ Ophiuchi 3.4 19 4 235 ε Sagittarii 2.0 19 29 210 γ Sagittarii 2.8 19 48 223 μ Sagittarii 2.9 20 3 243 λ Sagittarii 2.9 20 9 233 φ Sagittarii 2.7 20 29 222 σ Sagittarii 2.1 20 33 231 τ Sagittarii 3.4 20 41 228 ξ Sagittarii 3.6 20 47 243 π Sagittarii 3.0 20 59 243				
E Scorpii 2.4 17 56 210 σ Scorpii 3.1 18 2 234 α Scorpii 1.2 18 8 232 τ Scorpii 2.9 18 10 228 θ Ophiuchi 3.4 19 4 235 ε Sagittarii 2.0 19 29 210 γ Sagittarii 2.8 19 48 223 μ Sagittarii 2.8 19 48 223 μ Sagittarii 4.0 20 3 243 λ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 φ Sagittarii 2.7 20 29 222 σ Sagittarii 2.7 20 29 222 σ Sagittarii 2.1 20 33 231 τ Sagittarii 3.4 20 41 228 ξ Sagittarii 3.6 20 47 243 π Sagittarii 3.0 20 59 243				
σ Scorpii 3·1 18 2 234 α Scorpii 1·2 18 8 232 τ Scorpii 2·9 18 10 228 θ Ophiuchi 3·4 19 4 235 ε Sagittarii 2·0 19 29 210 γ Sagittarii 3·1 19 31 221 δ Sagittarii 2·8 19 48 223 μ Sagittarii 4·0 20 3 243 λ Sagittarii 2·9 20 9 233 φ Sagittarii 3·3 20 23 230 ζ Sagittarii 2·7 20 29 222 σ Sagittarii 2·1 20 33 231 τ Sagittarii 3·4 20 41 228 ξ Sagittarii 3·6 20 47 243 π Sagittarii 3·0 20 59 243				
α Scorpii 1·2 18 8 232 τ Scorpii 2·9 18 10 228 θ Ophiuchi 3·4 19 4 235 ε Sagittarii 2·0 19 29 210 γ Sagittarii 3·1 19 31 221 δ Sagittarii 2·8 19 48 223 μ Sagittarii 2·9 20 2 23 λ Sagittarii 3·3 20 23 230 ζ Sagittarii 2·7 20 29 222 σ Sagittarii 3·4 20 41 228 ξ Sagittarii 3·6 20 47 243 π Sagittarii 3·0 20 59 243				234
T Scorpii 2.9 18 10 228 θ Ophiuchi 3.4 19 4 235 ε Sagittarii 2.0 19 29 210 γ Sagittarii 2.8 19 48 223 μ Sagittarii 2.8 19 48 223 μ Sagittarii 2.9 20 9 233 φ Sagittarii 2.9 20 9 233 φ Sagittarii 2.7 20 29 222 σ Sagittarii 2.7 20 29 222 σ Sagittarii 2.1 20 33 231 τ Sagittarii 3.4 20 41 228 ξ Sagittarii 3.6 20 47 243 π Sagittarii 3.0 20 59 243			18 8	
E Sagittarii 2·0 19 29 210 γ Sagittarii 3·1 19 31 221 δ Sagittarii 2·8 19 48 223 μ Sagittarii 4·0 20 3 243 λ Sagittarii 2·9 20 9 233 φ Sagittarii 3·3 20 23 230 ζ Sagittarii 2·7 20 29 222 σ Sagittarii 2·1 20 33 231 τ Sagittarii 3·4 20 41 228 ξ Sagittarii 3·6 20 47 243 π Sagittarii 3·0 20 59 243		2.9	18 10	228
γ Sagittarii 3·1 19 31 221 δ Sagittarii 2·8 19 48 223 μ Sagittarii 4·0 20 3 243 λ Sagittarii 2·9 20 9 233 φ Sagittarii 3·3 20 23 230 ζ Sagittarii 2·7 20 29 222 σ Sagittarii 2·1 20 33 231 τ Sagittarii 3·4 20 41 228 ξ Sagittarii 3·6 20 47 243 π Sagittarii 3·0 20 59 243	θ Ophiuchi	3.4		
δ Sagittarii 2.8 19 48 223 μ Sagittarii 4.0 20 3 243 λ Sagittarii 2.9 20 9 233 φ Sagittarii 2.7 20 29 222 σ Sagittarii 2.1 20 33 231 τ Sagittarii 3.4 20 41 228 ξ Sagittarii 3.6 20 47 243 π Sagittarii 3.0 20 59 243	_ ~ ~			
μ Sagittarii 4.0 20 3 243 λ Sagittarii 2.9 20 9 233 φ Sagittarii 3.3 20 23 230 ζ Sagittarii 2.7 20 29 222 σ Sagittarii 2.1 20 33 231 τ Sagittarii 3.4 20 41 228 ξ Sagittarii 3.6 20 47 243 π Sagittarii 3.0 20 59 243	γ Sagittarii	3.1		
λ Sagittarii 2·9 20 9 233 φ Sagittarii 2·7 20 29 222 σ Sagittarii 2·1 20 33 231 τ Sagittarii 3·4 20 41 228 ξ Sagittarii 3·6 20 47 243 π Sagittarii 3·0 20 59 243				
φ Sagittarii 3·3 20 23 230 ζ Sagittarii 2·7 20 29 222 σ Sagittarii 2·1 20 33 231 τ Sagittarii 3·4 20 41 228 ξ Sagittarii 3·6 20 47 243 π Sagittarii 3·0 20 59 243	μ Sagittarii		_	
σ Sagittarii 3·4 20 41 228 ξ Sagittarii 3·6 20 47 243 π Sagittarii 3·0 20 59 243	A Sagittarii			
σ Sagittarii 3·4 20 41 228 ξ Sagittarii 3·6 20 47 243 π Sagittarii 3·0 20 59 243	φ Sagittarii ···			
τ Sagittarii 3·4 20 41 228 ξ Sagittarii 3·6 20 47 243 π Sagittarii 3·0 20 59 243	σ Sagittarii			
ξ Sagittarii 3.6 20 47 243 π Sagittarii 3.0 20 59 243	τ Sagittarii			228
π Sagittarii 3.0 20 59 243	E Sagittarii	3.6		
ζ Capricorni 3·9 23 13 239	π Sagittarii	3.0		
	ζ Capricorni			
	_	,		
			• • •	
]		95.0		- 1
1 1 1				

Star. L.S.T. Az. Mag. h. m. 34 66 η Piscium... 3·7 3·7 0 20 Y Ceti 0 50 64 α Ceti III 2.8 3.8 o Tauri 1 45 52 π^3 Orionis ... 57 3 5 3.3 γ Tauri 3 10 3.9 32 α Tauri I • I 3 33 29 40 Orionis ... 1.7 58 3 α Orionis ... I · 2 4 I 2 55 40 Geminorum ... 5 23 3.4 γ Geminorum .. 5 36 28 1.9 β Canis Minoris 5 48 3·1 53 5 51 6 40 α Canis Minoris 60 0.5 3.8 β Cancri ... 50 ε Hydræ ... 3.2 7 57 ζ Hydræ ... 7 8 58 3.3 o Leonis ... é 3.8 48 α Leonis ... 8 44 1.3 42 ρ Leonis ... 8 58 50 3.9 θ Leonis ... 10 9 10 38 3 I 3.4 β Leonis ... 34 64 2.2 δ Virginis... ΙI 3.7 4 ε Virginis... 11 33 3.0 ... 45 α Serpentis 2.8 14 0 57 ε Serpentis 3.8 62 14 2 Y Serpentis 31 3.9 14 52 x Ophiuchi 15 22 50 3.4 β Ophiuchi 62 2.9 15 53 α Herculis 16 36 3.2 α Ophiuchi 16 12 2· I 4.I 72 Ophiuchi 50 16 31 3.7 δ Aquilæ ... 3.4 17 32 66 17 48 ζ Aquilæ ... 3.0 38 58 β Aquilæ ... 3.9 18 9 α Aquilæ ... 18 12 52 0.9 18 13 48 γ Aquilæ ... 2.8 ε Delphini 46 19 4.0 3 α Delphini 19 33 3.9 32 ε Pegasi ... 2.5 20 50 8 48 ζ Pegasi ... 3.6 2 I 3.9 21 23 66 Y Piscium... 2.6 α Pegasi ... 21 53 35 ω Piscium... 22 14 58 4.0 γ Pegasi ... 35 2.9 23 0

Star.	Mag.	L.S.T.	Az.
	<u> </u>	h. m.	
υ ⁴ Eridani	- 6		9
	3.6	2 57	146
ε Leporis β Leporis	3.3	3 8 3 28	118
α Columbæ	3.0		115
β Columbæ	3·2	4 19	146
ζ Canis Majoris	3.1	4 4 ^I 4 4 ^I	152 135
o ² Canis Majoris	3.1	4 41 5 8	133 121
ε Canis Majoris	1.6	5 15	132
22 Canis Majoris	3.7	5 15	130
δ Canis Majoris	2.0	5 18	126
η Canis Majoris	2.4	5 42	133
ξ Argus	3.2	5 56	123
ρ Argus	2.9	6 13	122
π Argus	2.7	6 16	156
a Mali	3.7	7 16	143
ξ Hydræ	3.7	9 58	139
ε Corvi	3.5	10 11	118
β Corvi	2.8	10 36	119
γ Hydræ	3.3	II 20	118
ι Centauri	2.9	I2 I2	154
π Hydræ	3.2	12 15	126
θ Centauri	2.3	12 56	153
γ Scorpii	3.4	13 10	123
δ Scorpii	2.5	14 1	118
π Scorpii	3.0	14 6	126
σ Scorpii	3.1	14 27	124
α Scorpii	1.2	14 37	126
τ Scorpii ε Scorpii	2.9	14 48	130
ε Scorpii θ Ophiuchi	2·4 3·4	15 27 15 27	147 123
9:::	4.0	15 27 16 13	115
μ Sagittarii	3·I	16 26	136
υ Scorpii	2.8	16 29	157
λ Scorpii	1.7	16 30	156
λ Sagittarii	2.9	16 35	125
δ Sagittarii	2.8	16 40	135
φ Sagittarii	3.3	16 56	128
ξ Sagittarii	3.6	16 57	115
ε Sagittarii	2.0	17 2	147
σ Sagittarii	2·I	17 4	127
π Sagittarii	3.0	17 9	115
η Sagittarii	3.2	17 12	156
τ Sagittarii	3.4	17 19	130
ζ Sagittarii ζ Capricorni	2.7	17 21	135
ζ Capricorni c² Aquarii	3.8	19 28	116
α Piscis Australis	3.0	21 10	135
β Celi	2.2	22 41	110
	~ ~	~~	
		·	اــــــــــا

Star.	Mag.	L. S.T.	Az.
		h. m.	0
α Piscis Australis	1.3	0 29	225
c ² Aquarii	3⋅8	10	244
β Celi	2.2	2 37	250
υ ⁴ Eridani	3.6	5 33	214
α Columbæ	2.7	6 55	214
β Columbæ	3.5	6 55	208
ε Leporis	3.3	6 56	242
β Leporis	3.3	7 22	245
ζ Canis Majoris	3.1	7 53 8 12	225
π Argus	2.7		204
ε Canis Majoris	1.6	8 35	228
22 Canis Majoris	3.7	8 41	230
o ² Canis Majoris	3·1	8 52	239
δ Canis Majoris	2.0	8 52	234
η Canis Majoris	2.4	9 0	227
ξ Argus	3.2	9 36	237
ρ Argus	2.9	9 55	238
a Mali	3.7	10 4	217
ξ Hydræ	3.7	13 0	221
ε Corvi	3.2	14 I	242
c Centauri	2.9	14 20	206
β Corvi		14 24	241
γ Hydræ	3.3	15 8 15 8	242
θ Centauri	2.3	_	207
π Hydræ	3.5	15 49 16 48	234
γ Scorpii π Scorpii	3.4		237 234
	3.0		242
a *	2·5 2·4	17 49 18 3	213
α	3·I	18 5	236
~	I·2	18 11	234
~	2.9	18 14	230
τ Scorpii	2.8	18 21	203
λ Scorpii	1.7	18 26	204
θ Ophiuchi	3.4	19 7	237
η Sagittarii	3·2	19 12	204
γ Sagittarii		19 36	224
ε Sagittarii	2.0	19 36	213
8 Sagittarii	2.8	19 52	225
μ Sagittarii	4.0	20 5	245
λ Sagittarii	2.9	20 II	235
φ Sagittarii	3.3	20 26	232
ζ Sagittarii	2.7	20 33	225
σ Sagittarii	2·I	20 36	233
τ Sagittarii	3.4	20 45	230
ξ Sagittarii	3.6	20 49	245
π Sagittarii	3.0	2I I	245
ζ Capricorni	3.9	23 16	24I
<u> </u>			

			
Star.	Mag.	L.S.T.	Az.
		h. m.	0
ζ Pegasi	3.6	0 6	312
α Pegasi	2.6	0 9 1 3	325
γ Piscium	3.9		294
γ Pegasi	2.9	I 18	325
ω Piscium	4.0	1 36	302
η Piscium	3.7	2 34	326
γ Ceti	3.7	4 28	294
α Ceti o Tauri	2·8 3·8	4 45	296
		4 55 5 20	308 328
γ Tauri α Tauri	3.9	_	331
π^3 Orionis	3.3	5 29 6 25	303
γ Orionis	1.7	7 2	302
α Orionis	I·2	7 30	305
γ Geminorum	1.9	7 30	332
ξ Geminorum	3.4	7 59	320
β Canis Minoris	3.1	8 58	307
α Canis Minoris	0.2	9 19	300
β Cancri	3.8	9 44	310
ε Hydræ	3.2	IO 22	303
ζ Hydræ	3.3	10 33	302
o Leonis	3.8	11 6	312
α Leonis	1.3	II 24	318
ρ Leonis	3.9	12 0	310
θ Leonis β Leonis	3.4	12 II 12 52	329 326
ε Virginis	3.0	12 52 14 23	315
δ Virginis	3.7	14 38	296
γ Serpentis	3.9	16 54	329
α Serpentis	2.8	17 20	303
ε Serpentis	3.8	17 32	298
α Herculis	3.2	18 21	324
к Ophiuchi	3.4	18 26	310
α Ophiuchi	2· I	18 50	319
β Ophiuchi	2.9	19 25	298
72 Ophiuchi	3.7	19 35	310
ζ Aquilæ	3.0	20 16	322
δ Aquilæ	3.4	21 10	294
γ Aquilæ	2.8	21 11	312
α Aquilæ β Aquilæ	0.9	2I 22 2I 33	308 302
α Delphini	3·9	21 33 21 39	302
ε Delphini	4.0	21 55	314
ε Pegasi	2.5	23 12	310
0		J	
			-

Star. Mag. L.S.T. Az.				
η Piscium 3·7 0 26 31 γ Ceti 3·7 0 52 64 α Ceti 2·8 1 13 62 ο Tauri 3·8 1 49 50 π³ Orionis 3·3 3 7 55 γ Tauri 1·1 3 41 25 α Orionis 1·7 3 42 56 α Orionis 1·7 3 42 56 α Orionis 1·2 4 15 53 ξ Geminorum 1·9 5 44 24 β Canis Minoris 3·1 5 51 50 α Canis Minoris 0·5 5 54 58 β Cancri 3·8 6 43 48 ε Hydræ 3·5 7 4 55 ζ Hydræ 3·5 7 4 55 ζ Hydræ 3·8 8 12 46	Star.	Mag.	L. S.T.	Az.
γ Ceti 3.7 0 52 64 α Ceti 2.8 1 13 62 ο Tauri 3.8 1 49 50 π³ Orionis 3.3 3 7 55 γ Tauri 1.1 3 41 25 α Orionis 1.7 3 42 56 α Orionis 1.2 4 15 53 ξ Geminorum 1.9 5 44 24 β Canis Minoris 3.1 5 51 50 α Canis Minoris 3.1 5 51 50 α Canis Minoris 3.5 7 4 55 β Cancri 3.8 6 43 48 ε Hydræ 3.5 7 4 55 ζ Hydræ 3.8 8 12 46 α Leonis 3.8 8 12 46 α Leonis 3.9 9 1 47	-		h. m.	0
Υ Ceti 3·7 0 52 64 α Ceti 2·8 1 13 62 ο Tauri 3·8 1 49 50 π³ Orionis 3·3 3 7 55 Υ Tauri 1·1 3 41 25 α Orionis 1·2 4 15 53 ξ Geminorum 1·2 4 15 53 ξ Geminorum 1·2 4 15 53 ξ Geminorum 1·2 4 15 53 ξ Geminorum 1·2 4 15 53 ξ Geminorum 1·2 4 15 53 ξ Geminorum 1·2 4 15 53 ξ Canis Minoris 0·5 5 54 58 β Cancri 3·8 6 43 48 ε Hydræ 3·8 8 12 46 α Leonis 3·8 8 12 <t< td=""><td></td><td>3.7</td><td>0 26</td><td>31</td></t<>		3.7	0 26	31
o Tauri 3·8 I 49 50 π³ Orionis 3·3 3 7 55 γ Tauri 1·1 3 4I 25 γ Orionis 1·7 3 42 56 α Orionis 1·2 4 15 53 ξ Geminorum 1·9 5 44 24 β Canis Minoris 3·1 5 51 50 α Canis Minoris 0·5 5 5 4 58 β Cancri 3·8 6 43 48 ε Hydræ 3·5 7 4 55 ζ Hydræ 3·8 8 12 46 α Leonis 3·8 8 12 46 α Leonis 3·9 9 1 47 β Virginis 3·8 48 39 ρ Leonis 3·9 9 1 47 β Virginis 3·8 9 57 66 θ Leonis <td>γ Ceti</td> <td>3.7</td> <td>0 52</td> <td>64</td>	γ Ceti	3.7	0 52	64
π³ Orionis 3·3 3 7 55 7 Tauri 3·9 3 17 29 α Tauri 1·1 3 41 25 γ Orionis 1·7 3 42 56 α Orionis 1·2 4 15 53 ξ Geminorum 1·9 5 44 24 β Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris α α α α α α α α α			1 13	62
γ Tauri 3.9 3 17 29 α Tauri 1.1 3 41 25 γ Orionis 1.2 4 15 53 ξ Geminorum 1.9 5 44 24 β Canis Minoris 3.1 5 51 50 α Canis Minoris 0.5 5 54 58 β Cancri 3.8 6 43 48 ε Hydræ 3.3 7 12 56 ο Leonis 3.8 8 12 46 α Leonis 3.9 9 1 47 β Virginis 3.8 9 57 66 θ Leonis 3.9 9 1 47 β Virginis 3.8 9 57 66 θ Leonis 3.7 11 6 62 ε Virginis 3.9 14 7 30 δ Virginis 3.9 14 38 46 α Serpentis 3.9 14 38 66 γ Serpentis 3.9 14 38 66 γ Serpentis 3.9 14 59 27 α Ophiuchi 3.9 14 59 27 </td <td></td> <td></td> <td></td> <td>50</td>				50
α Tauri 1·1 3 41 25 γ Orionis 1·7 3 42 56 α Orionis 1·2 4 15 53 ξ Geminorum 1·9 5 44 24 β Canis Minoris 3·1 5 51 50 α Canis Minoris 0·5 5 54 58 β Cancri 3·8 6 43 48 ε Hydræ 3·5 7 4 55 ζ Hydræ 3·3 7 12 56 ο Leonis 3·8 8 12 46 α Leonis 1·3 8 48 39 ρ Leonis 3·9 9 1 47 β Virginis 3·8 9 57 66 θ Leonis 3·4 10 16 27 β Leonis 3·7 11 6 62 ε Virginis 3·3 11 38 42 α Serpentis 3·9 14 38 66 γ Serpentis 3·9 14 38 66 γ Serpentis 3·9 14 38 66			3 7	
γ Orionis 1.7 3 42 56 α Orionis 1.2 4 15 53 ξ Geminorum 3.4 5 28 37 γ Geminorum 1.9 5 44 24 β Canis Minoris 0.5 5 54 58 β Cancri 3.8 6 43 48 ε Hydræ 3.5 7 4 55 ζ Hydræ 3.3 7 12 56 ο Leonis 3.8 8 12 46 α Leonis 3.9 9 1 47 β Virginis 3.8 9 57 66 θ Leonis 3.4 10 16 27 β Leonis 3.4 10 16 27 β Leonis 3.7 11 6 62 ε Virginis 3.7 11 6 62 ε Virginis 3.9 14 38 66 γ Serpentis 3.9 14 38 66 γ Serpentis 3.9 14 59 27 χ Ophiuchi 3.9 14 59 27 χ Ophiuchi 2.9 15 56 60				
α Orionis 1.2 4 15 53 ξ Geminorum 3.4 5 28 37 γ Geminorum 1.9 5 44 24 β Canis Minoris 0.5 5 54 58 β Cancri 3.8 6 43 48 ε Hydræ 3.5 7 4 55 ζ Hydræ 3.3 7 12 56 ο Leonis 3.8 8 12 46 α Leonis 3.8 8 12 46 α Leonis 3.9 9 1 47 β Virginis 3.8 9 57 66 θ Leonis 3.4 10 16 27 β Leonis 3.4 10 16 27 β Leonis 3.7 11 6 62 ε Virginis 3.7 11 6 62 ε Virginis 3.9 14 38 42 α Serpentis 3.9 14 38 66 γ Serpentis 3.9		1		
ξ Geminorum 3.4 5 28 37 γ Geminorum 1.9 5 44 24 β Canis Minoris 0.5 5 51 50 α Canis Minoris 0.5 5 54 58 β Cancri 3.8 6 43 48 ε Hydræ 3.5 7 4 55 ζ Hydræ 3.3 7 12 56 ο Leonis 3.8 8 12 46 α Leonis 3.8 8 12 46 α Leonis 3.9 9 1 47 β Virginis 3.8 9 57 66 θ Leonis 3.4 10 16 27 β Leonis 3.4 10 16 27 β Leonis 3.7 11 6 62 ε Virginis 3.7 11 6 62 ε Virginis 3.9 14 38 46 λ Ophiuchi 3.9 14 38 66 γ Serpentis 3.9 14 38 66 γ Serpentis 3.9 14 59 27 κ Ophiuchi 3.9 15 56 60				
γ Geminorum 1.9 5 44 24 β Canis Minoris 3·1 5 51 50 α Canis Minoris 0·5 5 54 58 β Cancri 3·8 6 43 48 ε Hydræ 3·5 7 4 55 ζ Hydræ 3·3 7 12 56 ο Leonis 3·8 8 12 46 α Leonis 1·3 8 48 39 ρ Leonis 3·9 9 1 47 β Virginis 3·8 9 57 66 θ Leonis 3·4 10 16 27 β Leonis 3·4 10 16 27 β Leonis 3·7 11 6 62 ε Virginis 3·0 11 38 42 α Serpentis 3·0 11 38 42 α Serpentis 3·8 14 2 55 ε Serpentis 3·8 14 4 60 λ Ophiuchi 3·9 14 38 66 γ Serpentis 3·9 14 59 27 χ Ophiuchi 3·9 15 56				
β Canis Minoris 3·1 5 51 50 α Canis Minoris 0·5 5 54 58 β Cancri 3·8 6 43 48 ε Hydræ 3·5 7 4 55 ζ Hydræ 3·3 7 12 56 o Leonis 3·8 8 12 46 α Leonis 1·3 8 48 39 ρ Leonis 3·9 9 1 β Virginis 3·8 9 57 66 θ Leonis 3·4 10 16 27 β Leonis 3·4 10 16 27 β Leonis 3·7 11 6 62 ε Virginis 3·7 11 6 62 ε Virginis 3·0 11 38 42 α Serpentis 3·8 14 2 55 ε Serpentis 3·8 14 4 60 λ Ophiuchi 3·9 14 38 66 γ Serpentis 3·9 14 59 27 χ Ophiuchi 2·9 15 56 <td< td=""><td></td><td></td><td>5 20</td><td></td></td<>			5 20	
α Canis Minoris 0.5 5 54 58 β Cancri 3.8 6 43 48 ε Hydræ 3.5 7 4 55 ζ Hydræ 3.3 7 12 56 ο Leonis 3.8 8 12 46 α Leonis 1.3 8 48 39 ρ Leonis 3.9 9 1 47 β Virginis 3.8 9 57 66 θ Leonis 3.4 10 16 27 β Leonis 3.4 10 16 27 β Leonis 3.7 11 6 62 ε Virginis 3.7 11 6 62 ε Virginis 3.9 14 38 42 α Serpentis 2.8 14 2 55 ε Serpentis 3.9 14 38 66 γ Serpentis 3.9 14 38 66 γ Serpentis 3.9 14 38 66 γ Serpentis 3.9 14 59 27 χ Ophiuchi 2.9 15 56 60 α Herculis 3.5 16 7 32 <td></td> <td></td> <td>7 TT</td> <td></td>			7 TT	
β Cancri 3·8 6 43 48 ε Hydræ 3·5 7 4 55 ζ Hydræ 3·3 7 12 56 ο Leonis 3·8 8 12 46 α Leonis 1·3 8 48 39 ρ Leonis 3·9 9 1 47 β Virginis 3·8 9 57 66 66 θ Leonis 3·4 10 16 27 β Leonis 3·7 11 6 62 ε Virginis 3·7 11 6 62 ε Virginis 3·0 11 38 42 α Serpentis 3·0 11 38 42 α Serpentis 3·8 14 2 55 ε Serpentis 3·9 14 38 66 γ Serpentis 3·9 14 59 27 x Ophiuchi 3·9 15	Canis Minoria			20
E Hydræ 3.5 7 4 55 C Hydræ 3.3 7 12 56 O Leonis 3.8 8 12 46 A Leonis 1.3 8 48 39 P Leonis 3.9 9 1 47 B Virginis 3.8 9 57 66 O Leonis 3.4 10 16 27 B Leonis 3.7 11 6 62 E Virginis 3.0 11 38 42 A Serpentis 3.0 11 38 42 A Serpentis 3.8 14 4 60 A Ophiuchi 3.9 14 38 66 Y Serpentis 3.9 14 38 66 Y Serpentis 3.9 14 59 27 X Ophiuchi 3.9 15 56 60 A Herculis 3.5 16 7 32 A Ophiuchi 2.1 16 16 39 C Ophiuchi 3.7 16 35 48 A Aquilæ 3.7 16 35 48 A Aquilæ 3.9 18 12 56 A Aquilæ 3.9 18 15 50 Y Aquilæ 3.9 19 40 28 E Pegasi 3.6 21 12 45 Y Piscium 3.9 21 25 64 A Pegasi 3.6 21 12 45 Y Piscium 3.9 21 25 64 A Pegasi 2.6 21 59 31 B Piscium 4.0 22 16 56				48
ζ Hydræ 3·3 7 12 56 ο Leonis 3·8 8 12 46 α Leonis 1·3 8 48 39 ρ Leonis 3·9 9 1 47 β Virginis 3·8 9 57 66 θ Leonis 3·4 10 16 27 β Leonis 2·2 10 45 30 δ Virginis 3·7 11 6 62 ε Virginis 3·0 11 38 42 α Serpentis 3·0 11 38 42 α Serpentis 3·8 14 4 60 λ Ophiuchi 3·9 14 38 66 γ Serpentis 3·9 14 38 66 γ Serpentis 3·9 14 59 27 χ Ophiuchi 3·9 15 56 60 α Herculis 3·5 16 7 32 α Ophiuchi 3·7 16 35				
ο Leonis 3.8 8 12 46 α Leonis 1.3 8 48 39 ρ Leonis 3.9 9 1 47 β Virginis 3.8 9 57 66 θ Leonis 3.4 10 16 27 β Leonis 2.2 10 45 30 δ Virginis 3.7 11 6 62 ε Virginis 3.0 11 38 42 α Serpentis 3.0 11 38 42 α Serpentis 3.8 14 2 55 ε Serpentis 3.9 14 38 66 γ Serpentis 3.9 14 38 66 γ Serpentis 3.9 14 59 27 χ Ophiuchi 3.9 14 59 27 χ Ophiuchi 3.5 16 7 32	ζ Hydræ			56
α Leonis 1·3 8 48 39 ρ Leonis 3·9 9 1 47 β Virginis 3·8 9 57 66 θ Leonis 3·4 10 16 27 β Leonis 2·2 10 45 30 δ Virginis 3·7 11 6 62 ε Virginis 3·0 11 38 42 α Serpentis 3·0 11 38 42 α Serpentis 3·8 14 4 60 λ Ophiuchi 3·9 14 38 66 γ Serpentis 3·9 14 59 27 κ Ophiuchi 3·9 14 59 27 κ Ophiuchi 3·4 15 26 48 β Ophiuchi 3·5 16 7 32 α Ophiuchi 3·7 16 35 48 δ Aquilæ <td></td> <td>3.8</td> <td></td> <td>46</td>		3.8		46
ρ Leonis 3.9 9 1 47 β Virginis 3.8 9 57 66 θ Leonis 3.4 10 16 27 β Leonis 2.2 10 45 30 δ Virginis 3.7 11 6 62 ε Virginis 3.0 11 38 42 α Serpentis 2.8 14 2 55 ε Serpentis 3.9 14 38 66 γ Serpentis 3.9 14 38 66 γ Serpentis 3.9 14 59 27 κ Ophiuchi 3.9 14 59 27 κ Ophiuchi 2.9 15 56 60 α Herculis 3.5 16 7 32 α Ophiuchi 3.7 16 35 48 δ Aquilæ 3.9 18 12 56 <td>α Leonis</td> <td></td> <td>8 48</td> <td></td>	α Leonis		8 48	
β Virginis 3.8 9 57 66 θ Leonis 3.4 10 16 27 β Leonis 2.2 10 45 30 δ Virginis 3.7 11 6 62 ε Virginis 3.0 11 38 42 α Serpentis 2.8 14 2 55 ε Serpentis 3.8 14 4 60 λ Ophiuchi 3.9 14 59 27 κ Ophiuchi 3.9 14 59 27 κ Ophiuchi 3.9 14 59 27 κ Ophiuchi 3.9 15 56 60 α Herculis 3.5 16 7 32 α Ophiuchi 3.7 16 35 48 δ Aquilæ 3.7 16 35 48 δ Aquilæ 3.9 18 12 56 α Aquilæ 3.9 18 12 56 α Aquilæ 2.8 18 17	ρ Leonis	3.9	9 1	
β Leonis 2·2 10 45 30 δ Virginis 3·7 11 6 62 ε Virginis 3·0 11 38 42 α Serpentis 2·8 14 2 55 ε Serpentis 3·8 14 4 60 λ Ophiuchi 3·9 14 38 66 γ Serpentis 3·9 14 59 27 κ Ophiuchi 3·4 15 26 48 β Ophiuchi 2·9 15 56 60 α Herculis 3·5 16 7 32 α Ophiuchi 2·1 16 16 39 γ2 Ophiuchi 3·7 16 35 48 δ Aquilæ 3·4 17 34 64 ζ Aquilæ 3·9 18 12 56 α Aquilæ 3·9 18 12 56 α Aquilæ 2·8 18 17 45 ε Delphini 2·5 20		3.8	9 57	
δ Virginis 3·7 11 6 62 ε Virginis 3·0 11 38 42 α Serpentis 2·8 14 2 55 ε Serpentis 3·8 14 4 60 λ Ophiuchi 3·9 14 38 66 γ Serpentis 3·9 14 59 27 κ Ophiuchi 3·4 15 26 48 β Ophiuchi 2·9 15 56 60 α Herculis 3·5 16 7 32 α Ophiuchi 2·1 16 16 39 γ2 Ophiuchi 3·7 16 35 48 δ Aquilæ 3·4 17 34 64 ζ Aquilæ 3·9 18 12 56 α Aquilæ 3·9 18 12 56 α Aquilæ 2·8 18 17 45 ε Delphini 2·8 18 17 45 ε Pegasi 2·5 20		3.4	10 16	27
E Virginis 3.0				
α Serpentis 2·8 14 2 55 ε Serpentis 3·8 14 4 60 λ Ophiuchi 3·9 14 38 66 γ Serpentis 3·9 14 59 27 κ Ophiuchi 3·4 15 26 48 β Ophiuchi 2·9 15 56 60 α Herculis 3·5 16 7 32 α Ophiuchi 2·1 16 16 39 γ2 Ophiuchi 3·7 16 35 48 δ Aquilæ 3·4 17 34 64 ζ Aquilæ 3·9 18 12 56 α Aquilæ 3·9 18 15 50 γ Aquilæ 2·8 18 17 45 ε Delphini 2·8 18 17 45 ε Pegasi 2·5 20 12 48 <td></td> <td></td> <td></td> <td></td>				
E Serpentis 3.8 14 4 60 λ Ophiuchi 3.9 14 38 66 γ Serpentis 3.9 14 59 27 κ Ophiuchi 3.4 15 26 48 β Ophiuchi 2.9 15 56 60 α Herculis 3.5 16 7 32 α Ophiuchi 2.1 16 16 39 72 Ophiuchi 3.7 16 35 48 δ Aquilæ 3.4 17 34 64 ζ Aquilæ 3.9 18 12 56 α Aquilæ 3.9 18 12 56 α Aquilæ 3.9 18 12 56 α Aquilæ 0.9 18 15 50 γ Aquilæ 2.8 18 17 45 ε Delphini 2.8 18 17 45 ε Delphini 3.9 19 40 28 ε Pegasi 2.5 20 12 48 ζ Pegasi 3.6 21 12 45 γ Piscium 3.9 21 25 64 α Pegasi 3.9 21 25 64 α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56				
λ Ophiuchi 3.9 14 38 66 γ Serpentis 3.9 14 59 27 κ Ophiuchi 3.4 15 26 48 β Ophiuchi 2.9 15 56 60 α Herculis 3.5 16 7 32 α Ophiuchi 2.1 16 16 39 γ2 Ophiuchi 3.7 16 35 48 δ Aquilæ 3.4 17 34 64 ζ Aquilæ 3.9 18 12 56 α Aquilæ 3.9 18 12 56 α Aquilæ 2.8 18 17 45 τ Delphini 2.8 18 17 45 τ Pegasi 2.5 20 12 48 ζ Pegasi 3.9 21 25 64 α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56				55
γ Serpentis 3·9 14 59 27 κ Ophiuchi 3·4 15 26 48 β Ophiuchi 2·9 15 56 60 α Herculis 3·5 16 7 32 α Ophiuchi 2·1 16 16 39 γ2 Ophiuchi 3·7 16 35 48 δ Aquilæ 3·0 17 53 35 β Aquilæ 3·9 18 12 56 α Aquilæ 0·9 18 15 50 γ Aquilæ 2·8 18 17 45 ε Delphini 2·8 18 17 45 ε Pegasi 2·5 20 12 48 ζ Pegasi 3·9 21 25 64 α Pegasi 2·6 21 59 31 ω Piscium 4·0 22 16 56		3.8		
x Ophiuchi 3·4 15 26 48 β Ophiuchi 2·9 15 56 60 α Herculis 3·5 16 7 32 α Ophiuchi 2·1 16 16 39 72 Ophiuchi 3·7 16 35 48 δ Aquilæ 3·0 17 53 35 β Aquilæ 3·9 18 12 56 α Aquilæ 0·9 18 15 50 γ Aquilæ 2·8 18 17 45 ε Delphini 4·0 19 7 44 α Delphini 3·9 19 40 28 ε Pegasi 2·5 20 12 48 ζ Pegasi 3·9 21 25 64 α Pegasi 2·6 21 59 31 ω Piscium 4·0 22 16 56			1	
β Ophiuchi 2·9 15 56 60 α Herculis 3·5 16 7 32 α Ophiuchi 2·1 16 16 39 72 Ophiuchi 3·7 16 35 48 δ Aquilæ 3·4 17 34 64 ζ Aquilæ 3·9 18 12 56 α Aquilæ 0·9 18 15 50 γ Aquilæ 2·8 18 17 45 ε Delphini 2·8 18 17 45 ε Pegasi 2·5 20 12 48 ζ Pegasi 3·9 21 25 64 α Pegasi 2·6 21 59 31 ω Piscium 4·0 22 16 56				48
α Herculis 3·5 16 7 32 α Ophiuchi 2·1 16 16 39 72 Ophiuchi 3·7 16 35 48 δ Aquilæ 3·4 17 34 64 ζ Aquilæ 3·9 18 12 56 α Aquilæ 0·9 18 15 50 γ Aquilæ 2·8 18 17 45 ε Delphini 4·0 19 7 44 α Delphini 3·9 19 40 28 ε Pegasi 2·5 20 12 48 ζ Pegasi 3·9 21 25 64 α Pegasi 2·6 21 59 31 ω Piscium 4·0 22 16 56				
α Ophiuchi 2·I 16 16 39 72 Ophiuchi 3·7 16 35 48 δ Aquilæ 3·4 17 34 64 ζ Aquilæ 3·0 17 53 35 β Aquilæ 3·9 18 12 56 α Aquilæ 2·8 18 17 45 τ Delphini 2·8 18 17 45 τ Delphini 3·9 19 40 28 τ Pegasi 2·5 20 12 48 ζ Pegasi 3·9 21 25 64 α Pegasi 2·6 21 59 31 ω Piscium 4·0 22 16 56			· · ·	
72 Ophiuchi 3.7 16 35 48 8 Aquilæ 3.4 17 34 64 ζ Aquilæ 3.0 17 53 35 β Aquilæ 0.9 18 12 56 α Aquilæ 0.9 18 15 50 γ Aquilæ 2.8 18 17 45 ε Delphini 4.0 19 7 44 α Delphini 3.9 19 40 28. ε Pegasi 2.5 20 12 48 ζ Pegasi 2.5 20 12 48 ζ Pegasi 3.6 21 12 45 γ Piscium 3.9 21 25 64 α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56				
δ Aquilæ 3·4 17 34 64 ζ Aquilæ 3·0 17 53 35 β Aquilæ 3·9 18 12 56 α Aquilæ 0·9 18 15 50 γ Aquilæ 2·8 18 17 45 ε Delphini 4·0 19 7 44 α Delphini 3·9 19 40 28 ε Pegasi 2·5 20 12 48 ζ Pegasi 3·6 21 12 45 γ Piscium 3·9 21 25 64 α Pegasi 2·6 21 59 31 ω Piscium 4·0 22 16 56				
ζ Aquilæ 3.0 17 53 35 β Aquilæ 3.9 18 12 56 α Aquilæ 0.9 18 15 50 γ Aquilæ 2.8 18 17 45 ε Delphini 4.0 19 7 44 α Delphini 3.9 19 40 28 ε Pegasi 2.5 20 12 48 ζ Pegasi 3.6 21 12 45 γ Piscium 3.9 21 25 64 α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56	δ Aquilæ	3.4	17 34	64
β Aquilæ 3.9 18 12 56 α Aquilæ 0.9 18 15 50 γ Aquilæ 2.8 18 17 45 ε Delphini 4.0 19 7 44 α Delphini 3.9 19 40 28 ε Pegasi 2.5 20 12 48 ζ Pegasi 3.6 21 12 45 γ Piscium 3.9 21 25 64 α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56		3.0	17 53	35
γ Aquilæ 2.8 18 17 45 ε Delphini 4.0 19 7 44 α Delphini 3.9 19 40 28. ε Pegasi 2.5 20 12 48 ζ Pegasi 3.6 21 12 45 γ Piscium 3.9 21 25 64 α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56				56
ε Delphini 4.0 19 7 44 α Delphini 3.9 19 40 28 ε Pegasi 2.5 20 12 48 ζ Pegasi 3.6 21 12 45 γ Piscium 3.9 21 25 64 α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56	α Aquilæ			
α Delphini 3.9 19 40 28. ε Pegasi 2.5 20 12 48 ζ Pegasi 3.6 21 12 45 γ Piscium 3.9 21 25 64 α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56	γ Aquilæ		, , ,	
ε Pegasi 2.5 20 12 48 ζ Pegasi 3.6 21 12 45 γ Piscium 3.9 21 25 64 α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56	E Delphini			
ζ Pegasi 3.6 21 12 45 γ Piscium 3.9 21 25 64 α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56				
γ Piscium 3.9 21 25 64 α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56	Z Pegasi	2.6		
α Pegasi 2.6 21 59 31 ω Piscium 4.0 22 16 56	Piscium			
ω Piscium 4.0 22 16 56	α Pegasi			31
				56
			23 6	
		-		
			{	
	<u></u>	<u> </u>	<u> </u>	

			
Star.	Mag.	L.S.T.	Az.
	<u> </u>	h. m.	
α Piscis Australis	1.3	0 33	227
c ² Aquarii	3.8	I 2	245
β Ceti	2.2	2 39	252
υ ⁴ Eridani	3.6		217
ε Leporis	3.3	5 39 6 58	244
α Columbæ	2.7	7 1	216
β Columbæ	3.2	7 2	211
ζ Canis Majoris	3.1	7 57	227
π Argus	2.7	8 20	207
ε Canis Majoris	1.6	8 39	230
22 Canis Majoris	3.7	8 44	232
o ² Canis Majoris	3.1	8 54	241
8 Canis Majoris	2.0	8 54	235
η Canis Majoris ξ Argus	2.4	9 4	229
	3.2	9 39 9 58	239
ρ Argus a Mali	2·9 3·7		240
ξ Hydræ	3.7	10 9 13 4	224
ε Corvi	3.2	14 3	244
β Corvi	2.8	14 26	243
L Centauri	2.9	14 27	210
γ Hydræ	3.3	15 10	243
θ Centauri	2.3	15 15	210
π Hydræ	3.2	15 51	235
γ Scorpii	3.4	16 51	238
π Scorpii	3.0	17 44	236
δ Scorpii	2.5	17 51	244
σ Scorpii	3.1	18 7	237
ε Scorpii	2.4	18 9 18 14	216
α Scorpii	1.2	•	236
τ Scorpii υ Scorpii	2·9 2·8	18 17	207
υ Scorpii λ Scorpii	1.7	18 34	207
θ Ophiuchi	3.4	19 9	238
η Sagittarii	3.2	19 20	208
γ Sagittarii	3.1	19 40	226
ε Sagittarii	2.0	19 42	215
δ Sagittarii	2.8	19 56	227
λ Sagittarii	2.9	20 14	237
φ Sagittarii ζ Sagittarii	3.3	20 29	234
ζ Sagittarii	2.7	20 37	227
σ Sagittarii	2·I	20 39	235
τ Sagittarii γ Gruis	3·4 3·2	20 48 22 49	232 204
γ Gruis ζ Capricorni	3.2	23 18	243
2 Capitoum	ש ל	~5 10	-47
			

Star.	Mag.	L.S.T.	A7.
	<u>!</u>	h. m.	0
Star. η Piscium γ Ceti α Ceti η Tauri γ Orionis α Orionis ξ Geminorum β Canis Minoris α Canis Minoris α Canis Minoris α Leonis ς Hydræ ς Leonis ρ Leonis β Virginis θ Virginis δ Virginis α Serpentis ε Serpentis ε Serpentis α Ophiuchi γ Serpentis α Ophiuchi α Herculis α Ophiuchi α Herculis α Ophiuchi α Herculis α Ophiuchi	3.7 3.7 2.8 3.3 3.9 1.7 1.2 3.4 3.1 0.5 3.3 3.9 3.4 2.2 3.7 3.8 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9	0 33 0 54 1 15 1 52 3 10 3 25 3 45 4 19 5 34 5 56 6 47 7 7 15 8 9 59 10 52 11 42 14 56 14 40 15 58 16 14 16 21	A7. 27 62 60 47 52 25 54 51 348 56 46 53 54 43 36 45 63 22 60 39 53 63 22 45 88 29 36
α Herculis α Ophiuchi 72 Ophiuchi δ Aquilæ ζ Aquilæ β Aquilæ α Aquilæ γ Aquilæ γ Aquilæ	3·5 2·1 3·7 3·4 3·0 3·9 0·9 2·8	16 14 16 21 16 38 17 36 17 59 18 15 18 19 18 21	29 36 45 62 32 54 48 43
E Delphini α Delphini E Pegasi ζ Pegasi γ Piscium α Pegasi ω Piscium γ Pegasi γ Pegasi	4.0 3.9 2.5 3.6 3.9 2.6 4.0 2.9	19 11 19 48 20 15 21 16 21 27 22 6 22 19 23 13	41 24 45 43 62 27 53 28

		 	<u> </u>	İ
Star.	Mag.	L. S. T.	Az.	
-		h. m.	0	
α Piscis Australis		0 37	229	
β <i>Ceti</i> υ ⁴ Eridani	2·2 3·6	2 40	254	l
ε Leporis	3.3	5 44 7 0	219 245	
α Columbæ	2.7	7 6	219	ĺ
β Columbæ	3.2	7 9	214	l
ζ Canis Majoris	3.1	8 I	229	l
π Argus	2.7	8 28	210	l
ε Canis Majoris	1.6	8 42	232	l
22 Canis Majoris o ² Canis Majoris	3.7	8 47	234	l
δ Canis Majoris δ Canis Majoris	3.1	8 57 8 57	243	l
η Canis Majoris	2.4	8 57	237 231	l
ξ Argus	3.2	9 41	241	l
ρ Argus	2.9	10 0	242	ĺ
a Mali	3.7	10 14	222	
ξ Hydræ	3.7	13 8	226	
ε Corvi	3.2	14 5	246	l
β Corvi	2.8	14 28	245	l
ι Centauri γ Hydræ	2.9	14 34	213	l
γ Hydræ θ Centauri	3.3	15 12 15 22	245 213	l
π Hydræ	3.2	15 54	237	
γ Scorpii	3.4	16 54	240	
π Scorpii	3.0	17 47	238	
δ Scorpii	2.5	17 53	246	
σ Scorpii	3.1	18 10	239	
ε Scorpii	2.4	18 14	219	
α Scorpii τ Scorpii	1.2	18 17	238	
τ Scorpu κ Scorpii	2.9	18 36	234 203	
υ Scorpii	2.8	18 37	210	
λ Scorpii	1.7	18 42	210	
θ Ophiuchi	3.4	19 12	240	
η Sagittarii	3.2	19 27	211	
γ Sagittarii	3.I	19 44	228	
ε Sagittarii	2.0	19 47	218	
δ Sagittarii λ Sagittarii	2.8	20 0 20 17	230 239	
	3.3	20 17	236	
φ Sagittarii ζ Sagittarii	2.7	20 41	229	
σ Sagittarii	2.1	20 42	237	
τ Sagittarii	3.4	20 51	234	
γ Gruis ζ Capricorni	3.2	22 57	208	
ζ Capricorni	3.9	23 20	245	
<u></u>				1

Star.	Mag.	L. S.T.	Az.
D		2.0,	
		h. m.	0
γ Piscium	3.9	0 59	298
γ Pegasi	2.9	1 5	332
ω Piscium	4.0	1 31	307
η Piscium	3.7	2 21	333
γ Ceti	3.7	4 24	298
α Ceti	2.8	4 41	300
o Tauri γ Tauri	3.8	4 48	313
γ Tauri π^3 Orionis	3.9	5 5 6 20	335 308
	3.3	6 57	306
γ Orionis α Orionis	1.2	7 23	309
ξ Geminorum	3.4	7 48	326
β Canis Minoris	3.1	8 52	312
α Canis Minoris	0.5	9 14	304
β Cancri	3.8	9 37	314
ε Hydræ	3.2	10 17	307
ζ Hydræ	3.3	10 27	306
o Leonis	3.8	10 58	317
α Leonis	1.3	11 15	324
ρ Leonis	3.9	11 53 11 55	315 338
θ Leonis β Leonis	3.4 2·2	11 55 12 38	334
β Virginis	3.8	13 33	297
ε Virginis	3.0	14 14	321
δ Virginis	3.7	14 34	300
γ Serpentis	3.9	16 38	338
α Serpentis	2.8	17 15	307
ε Serpentis	3.8	17 28	302
α Herculis	3.2	18 8	331
λ Ophiuchi	3.9	18 14	297
ж Ophiuchi	3.4	18 19	315
α Ophiuchi	2·I	18 41	324
β Ophiuchi	2.9	19 20	302
72 Ophiuchi ζ Aquilæ	3.7	19 28 20 5	315 328
	3·0 2·8		317
γ Aquilæ δ Aquilæ	3.4	21 3 21 6	298
α Aquilæ	0.9	21 15	312
a Delphini	3.9	21 24	336
β Aquilæ	3.9	21 27	306
ε Delphini	4.0	21 47	319
ε Pegasi	2.2	23 5 23 56	315
α Pegasi	2.6	23 56	333
ζ Pegasi	3.6	23 58	317
		5.1	
i i			
		•	

L.S.T.	Mag.	Star.
L.S.T. h. m. 0 42 0 45 0 56 1 156 3 14 3 48 4 22 5 40 5 58 5 59 6 51 7 10 7 18 8 21 8 59 9 10 11 10 11 47 14 8 14 9 14 42 15 34 16 28 16 28 16 43 17 38 18 26 19 16 20 20 21 21 21 30 22 15 22 22 23 22	Mng. 3.7 4.0 3.78 3.98 3.98 3.98 3.99 3.	Piscium δ Ceti γ Ceti σ Ceti σ Ceti σ Orionis γ Orionis ξ Geminorum β Canis Minoris α Canis Minoris α Canis Minoris α Canis Minoris γ Cancri ε Hydræ ζ Hydræ δ Leonis γ Virginis δ Virginis δ Virginis ε Virginis α Serpentis ε Serpentis α Ophiuchi α Ophiuchi α Ophiuchi α Ophiuchi α Aquilæ ζ Aquilæ ζ Aquilæ ζ Aquilæ γ Pegasi γ Pegasi

Star. Mag. L.S.T. Az. υ ⁴ Eridani 3.6 2 41 138 α Columbæ 3-7 4 31 139 β Columbæ 3-1 4 21 143 Ç Canis Majoris 3-1 5 1 115 ε Canis Majoris 3-7 5 6 124 δ Canis Majoris 2-0 5 10 121 γ Canis Majoris 2-4 5 32 127 ξ Argus 3-5 5 49 117 π Argus 2-27 5 5 31 147 γ Argus 2-3 7 0 156 a Mali 3-7 7 2 136 4 4rgus 3-7 7 2 136 4 4rgus 3-7 7 2 136 4 4rgus 3-7 7 2 136 4 117 4 132 147 147 4 132 14 14				
υ ⁴ Eridani 3·6 2 41 138 α Columbæ 3·2 4 21 143 β Columbæ 3·2 4 21 143 ζ Canis Majoris 3·1 5 1 115 ε Canis Majoris 3·7 5 6 124 δ Canis Majoris 2·0 5 10 121 η Canis Majoris 2·4 5 32 127 ξ Argus 3·5 5 49 117 π Argus 2·7 5 53 147 ρ Argus 2·9 6 6 116 ζ Argus 2·9 6 6 116 ζ Argus 2·9 6 6 116 ζ Argus 2·9 6 6 116 ζ Argus 2·9 6 6 116 ζ Argus 2·9 6 6 116 ζ Argus 3·7 7 2 <	Star.	Mag.	L.S.T.	Az.
	Columbæ Columbæ Columbæ Canis Majoris Canis Majoris Canis Majoris Canis Majoris Canis Majoris Canis Majoris Canis Majoris Argus Argus Argus Argus Argus Corvi Centauri Hydræ Centauri Y Scorpii Scorpi	2·7 2·1 3·1 3·1 3·1 3·1 3·1 3·1 3·1 3	2 41 4 3 4 21 4 30 5 5 6 5 5 6 6 7 7 8 29 5 5 6 7 7 8 29 5 6 7 7 8 29 6 7 7 8 29 7 8 29 14 29 14 39 15 16 27 16 28 16 46 16 47 16 28 16 46 16 47 16 55 17 10 18 20 19 23 20 36 10 17 16 10 16 1	138 139 143 129 115 126 124 121 127 117 147 116 156 137 143 145 121 144 118 120 124 139 118 147 147 147 147 149 129 124 129 129 120 124 139 147 147 147 147 147 148 149 149 149 149 149 149 149 149

			 1
Star.	Mag.	L.S.T.	Az.
		h. m.	•
α Piscis Australis β Ceti	1·3 2·2	0 40 2 41	231 256
υ ⁴ Eridani	3.6	5 49	222
α Columbæ	2.7	7 11	22 I
β Columbæ	3.2	7 15	217
ζ Canis Majoris	3⋅1	8 4	231
π Argus	2.7	8 35	213
ε Canis Majoris	1.∙6	8 45	234
22 Canis Majoris	3.7	8 50	236
o ² Canis Majoris	3.1	8 59	245
δ Canis Majoris	2.0	9 0	239
ζ Argus	2.3		204
η Canis Majoris ξ Argus	2.4	. 9 10	233
ξ Argus ρ Argus	3.2	9.43	243 244
a Mali	2·9 3·7	10 18	224
ψ Argus	3.6	10 27	203
ξ Hydræ		13 12	228
β Corvi	3·7 2·8	14 29	247
c Centauri	2.9	14 40	215
θ Centauri	2.3	15 28	216
π Hydræ	3.5	15 57	239
γ Scorpii	3.4	16 56	242
π Scorpii	3.0	17 49	240
σ Scorpii	3.1	18 12	241
α Scorpii	I · 2	18 19	240
ε Scorpii	2.4	18 19	22I 236
τ Scorpii ι¹Scorpii	2·9 3·1	18 23 18 41	203
α	2.8	18 44	213
и Scorpii	2.5	18 45	207
λ Scorpii	1.7	18 49	213
θ Ophiuchi	3.4	19 14	242
η Sagittarii	3.2	19 34	214
γ Sagittarii	3·1	19 47	230
ε Sagittarii	2.0	19 52	220
δ Sagittarii	2.8	20 4	232
λ Sagittarii	2.9	20 19	241
φ Sagittarii ζ Sagittarii	3.3	20 35	238
ζ Sagittarii σ Sagittarii	2·7	20 44 20 45	23I 239
	3.4	20 54	236
	3.5		211
γ Gruis ζ Capricorni	3.9	23 5 23 21	247
,			
	ļ		l
	- [

Star.	Mag.	L. S.T.	Az.
2011		h. m.	0
δ Ceti γ Ceti	4.0	O 47 O 59	64 58
α Ceti	3·7 2·8	I 20	55
o Tauri	3.8	2 0	42
π ³ Orionis	3.3	3 18	48
δ Orionis	2.5	3 39	65
γ Orionis	1.7	3 51	49
α Orionis	I·2	4 26	46
ξ Geminorum α Canis Minoris	3.4	5 48 6 2	27
β Canis Minoris	3·1	6 2	51 43
β Cancri	3.8	6 56	40
ε Hydræ	3.2	7 14	48
ζ Hydræ	3.3	7 21	49
o Leonis	3.8	8 26	37
α Leonis	1.3	96	29
ρ Leonis		9 14	39
β Virginis η Virginis	3.8	10 4	59
η Virginis δ Virginis	3.7	10 28 11 13	65 55
ζ Virginis	3.4	11 43	65
ε Virginis	3.0	11 53	33
α Serpentis	2.8	14 12	48
ε Serpentis	3.8	14 12	53
λ Ophiuchi	3.9	14 45	59
× Ophiuchi β Ophiuchi	,	15 39	39
α Ophiuchi	2.9	16 4 16 35	53 28
72 Ophiuchi	3.7	16 48	39
δ Aquilæ	3.4	17 41	57
ζ Aquilae	3.0	18 14	24
β Aquilæ	3.9	18 21	49
α Aquilæ	0.9	18 27	42
γ Aquilæ ε Delphini	2.8	18 31	37
1	3.2	19 22 20 13	34 66
E Pegasi	2.5	20 25	39
ζ Pegasi	3.6	21 26	37
γ Piscium	3.9	21 32	37 58
ω Piscium	4.0	22 26	49
			İ
		2	
	1		
	!	1	
* "	1		
	1	1	

Star.	Mag.	L. S.T.	Az.
91		h. m.	0
θ Eridani	3.0	1 51	155
υ ⁴ Eridani	3.6	2 36	136
α Columbæ	2.7	3 58	136
β Columbæ	3.5	4 16	141
ζ Canis Majoris	3.1	4 27	127
ε Canis Majoris	1.6	5 2	124
22 Canis Majoris δ Canis Majoris	3.7	5 3 5 8	122
~	2.0		119
η Canis Majoris ξ Argus	2.4	5 29 5 46	125 115
π Argus	3·5 2·7		144
ρ Argus	2.9	5 47 6 4	114
ζ Argus	2.3	6 51	153
a Mali	3.7	6 58	133
ψ Argus	3.6	8 20	154
ξ Hydræ	3.7	9 42	130
β Corvi	2.8	10 29	112
د Centauri	2.9	11 46	142
π Hydræ	3.2	12 5	119
θ Centauri	2.3	12 31	141
γ Scorpii	3.4	13 0	116
π Scorpii σ Scoprii	3.0	13 56	118
σ Scoprii α Scorpii	3·1	14 18	117
113G Lupi	3.0	14 27 14 29	157
τ Scorpii	2.9	14 37	122
ε Scorpii	2.4	15 7	136
θ Ophiuchi	3.4	15 18	116
υ Scorpii	2.8	16 o	144
λ Scorpii	1.7	16 I	144
γ Sagittarii	3.1	16 12	128
ж Scorpii	2.5	16 22	150
δ Sagittarii	2.8	16 25	126
λ Sagittarii	2.9	16 25	117
ι¹ Scorpii ε Sagittarii	3.1	16 34 16 41	154
0:::	2.0		137
η Sagittarii φ Sagittarii	3.3	16 44 16 45	143 120
σ Sagittarii	2·I	16 53	119
ζ Sagittarii	2.7	17 7	127
τ Sagittarii	3.4	17 7	122
ζ Capricorni	3.9	19 21	112
γ Gruis	3.2	20 26	146
α Piscis Australis	1.3	21 3	127
β Ceti	2.2	22 36	103
		·	<u> </u>

LATITUDE 14º SOUTH.

SW. QUADRANT

		i '	
Star.	Mag.	L. S.T.	Az.
		h. m.	0
α Piscis Australis	1.3	0 43	233
β Ceti	2.2	2 42	257
θ Eridani	3.0	3 59	205
υ ⁴ Eridani	3.6	5 54	224
α Columbæ	2.7	7 16	224
β Columbæ	3.2	7 20	219
ζ Canis Majoris	3.1	8 7	233
π Argus ε Canis Majoris	2·7 1·6	8 41 8 48	236
22 Canis Majoris	3.7	8 48 8 53	238
δ Canis Majoris	2.0	9 2	241
ζ Argus	2.3	9 11	207
η Canis Majoris	2.4	9 13	235
ξ Argus	3.5	9 46	245
ρ Argus	2.9	10 4	246
<i>a</i> Mali	3.7	10 22	227
ψ Argus	3.6	10 36	206
ξ Hydræ	3.7	13 16	230
β Corvi	2.8	14 31	248
Centauri	2.9	14 46	218
θ Centauri π Hydræ	2.3	15 33 15 59	219 241
1120 T	3·5 3·0	15 59 16 31	203
γ Scorpii	3.4	16 58	244
π Scorpii	3.0	17 52	242
σ Scorpii	3.1	18 14	243
α Scorpii	1.2	18 21	241
ε Scorpii	2.4	18 23	224
τ Scorpii	2.9	18 25	238
υ Scorpii	2.8	18 50	216
ι¹Scorpii	3.1	18 50	206
ж Scorpii	2.5	18 52	210
λ Scorpii θ Ophiuchi	1.7	18 55 19 16	216
α ⁺ · · · · · ·	3·4 3·2	19 16 19 40	244 217
η Sagittarii γ Sagittarii	3.1	19 50	232
ε Sagittarii	2.0	19 57	223
δ Sagittarii	2.8	20 7	234
λ Sagittarii	2.9	20 21	243
φ Sagittarii	3.3	20.37	240
σ Sagittarii	2·I	20 47	241
ζ Sagittarii	2.7	20 47	233
τ Sagittarii	3.4	20 57 23 I2	238
γ Gruis ζ <i>Capricorni</i>	3·2 3·9	23 12 23 23	214 248
S Oupricorne		25 20	~20
		i	

		1	
Star.	Mag.	L. S.T.	Az.
		h. m.	٥
γ Piscium	3.9	0 54	302
ω Piscium	4.0	I 24	311
γ Ceti	3.7	4 19	302
δ Ceti	4.0	4 23	296
α Ceti	2.8	4 36	305
o Tauri	3⋅8	4 40	318
π ³ Orionis	3.3	6 12	312
γ Orionis	1.7	6 51	311
α Orionis δ Orionis	I·2	7 16	314
δ Orionis ξ Geminorum	2.5	7 17	295
β Canis Minoris	3.4	7 34	333
α Canis Minoris	3.1	8 43	317
	o·5 3·8	9 8 9 28	309
β Cancri ε Hydræ	3.2	9 28	320 312
ζ Hydræ	3.3	10 10	311
o Leonis	3.8	10 48	323
α Leonis	1.3	II 2	331
ρ Leonis	3.9	11 44	321
β Virginis	3.8	13 28	301
ε Virginis	3.0	14 3	327
η Virginis	4.0	14 4	295
δ Virginis	3.7	14 29	305
ζ Virginis	3.4	15 19	295
α Serpentis	2.8	17 8	312
ε Serpentis	3.8	17 22	307
λ Ophiuchi	3.9	18 9	301
х Ophiuchi	3.4	18 9	321
α Ophiuchi	2.1	18 27	332
β Ophiuchi	2.9	19 14	307
72 Ophiuchi	3.7	19 18	321
ζ Aquilæ	3.0	19 50	336
γ Aquilæ	2.8	20 53	323
δ Aquilæ	3.4	2 I I	303
α Aquilæ	0.9	21 7	318
β Aquilæ	3.9	21 21	311
ε Delphini	4.0	21 36	326
ε Pegasi ζ Pegasi	2.5	22 55	321
α Aquarii	3·6 3·2	23 48 23 51	323 294
~ 214mares	~	~~ 01	~0 =
İ			
:		į	
* .			
	i		

· Star.	Mag.	L. S.T.	Λz.
θ Eridani υ Eridani α Columbæ β Columbæ ζ Canis Majoris ε Canis Majoris 22 Canis Majoris	3·0 3·6 2·7 3·2 3·1 1·6 3·7	h. m. 1 43 2 32 3 54 4 11 4 24 4 59 5 1	152 134 134 138 125 122
δ Canis Majoris η Canis Majoris π Argus ζ Argus μ Argus ψ Argus ξ Hydræ β Corvi	2.0 2.4 2.7 2.3 3.7 3.6 3.7 2.8	5 5 26 5 42 6 44 6 54 8 12 9 39 10 28	117 123 141 149 131 150 128 110
c Centauri π Hydræ θ Centauri γ Scorpii π Centauri κ Centauri π Scorpii σ Scorpii	2·9 3·5 2·3 3·4 2·7 3·4 3·0 3·1	11 41 12 2 12 26 12 58 13 27 13 51 13 54 14 15	139 117 139 114 156 156 116
113 G Lupi α Scorpii τ Scorpii ε Scorpii θ Ophiuchi υ Scorpii λ Scorpii	3.0 1.2 2.9 2.4 3.4 2.8 1.7	14 20 14 24 14 34 15 3 15 16 15 54 15 56	153 117 120 134 <i>114</i> 142 141
γ Sagittarii κ Scorpii δ Sagittarii λ Sagittarii ι¹ Scorpii ε Sagittarii η Sagittarii γ Sagittarii γ Sagittarii	3·I 2·5 2·8 2·9 3·I 2·0 3·2 3·3	16 9 16 15 16 23 16 23 16 26 16 37 16 39 16 43	126 147 125 115 150 135 141
σ Sagittarii ζ Sagittarii τ Sagittarii ζ Capricorni γ Gruis α Piscis Australis β Ceti	2·1 2·7 3·4 3·9 3·2 1·3 2·2	16 51 17 4 17 5 19 20 20 20 21 0	117 125 120 110 143 125
		4	

SW. QUADRANT NW. QUADRANT

Star.	Mag.	L. S.T.	Az.
Dinaia Assatualia	- 4	h. m.	0
α Piscis Australis β Ceti	1·3 2·2	0 46 2 44	235 259
θ Eridani	3.0	4 7	208
υ ⁴ Eridani	3.6	5 58	226
α Columbæ	2.7	7 20	226
β Columbæ ζ Canis Majoris	3·1	7 25 8 10	222
π Argus	2.7	8 46	219
ε Canis Majoris	1.6	8 51	238
22 Canis Majoris	3.7	8 55	240
δ Canis Majoris	2.0	9 5	243
η Canis Majoris	2.4	9 16	237
$egin{array}{cccccccccccccccccccccccccccccccccccc$	2·3 3·7	10 26	229
	3.6	10 44	210
ξ Hydræ	3.7	13 19	232
β Corvi	2.8	14 32	250
Centauri	2.7	14 51 15 33	221 204
η Centauri θ Centauri	2.7	15 38	221
x Centauri	3.4	15 57	204
π Hydræ	3.2	16 2	243
113 G Lupi	3.0	16 40	207
γ Scorpii	3.4	17 0	246
π Scorpii	3·1	17 54 18 17	244 245
σ Scorpii α Scorpii	1.5	18 24	243
ε Scorpii	2.4	18 27	226
τ Scorpii	2.9	18 28	240
υ Scorpii	2.8	18 56	218
L ¹ Scorpii	3.1	18 58 18 59	210
κ Scorpii λ Scorpii	2.5	18 59 19 0	219
θ Ophiuchi	3.4	19 18	246
η Sagittarii	3.2	19 45	219
γ Sagittarii	3.1	19 53	234
ε Sagittarii	2.0	20 I	225
δ Sagittarii λ Sagittarii	2·8 2·9	20 9 20 23	235 245
λ Sagittarii φ Sagittarii	3.3	20 39	24I
σ Sagittarii	2·I	20 49	243
ζ Sagittarii	2.7	20 50	235
τ Sagittarii	3.4	20 59 23 18	240 217
γ Gruis ζ Capricorni	3·2 3·9	23 24	250
S Capitoline iii			
a 1 al			
		<u> </u>	

			 -
Star.	Mag.	L. S.T.	Az.
		h. m.	0
γ Aquarii	4.0	0 7	294
γ Piscium	3.9	. 0 51	304
ω Piscium	4.0	I 20	314
γ Ceti	3.7	4 17	305
δ Ceti	4.0	4 21	298
α Ceti	2.8	4 33	307
o Tauri	3.8	4 35	321
π^3 Orionis	3.3	6 8	315
γ Orionis	1.7	6 47	314
α Orionis	I • 2	7 12	317
δ Orionis	2.5	7 15	297
ε Orionis	1.7	7 20	295
ξ Geminorum	3.4	7 25	338
β Canis Minoris	3.1	8 38	320
α Canis Minoris	0.2	9 4	311
β Cancri	3.8	9 23	323
ε Hydræ	3.2	10 6	315
ζ Hydræ	3.3	10 17	313
o Leonis	3.8	10 42	326
α Leonis	1.3	10 54	335
ρ Leonis	3.9	11 38	324
β Virginis	3.8		303
ε Virginis	3.0		331
η Virginis γ Virginis	4.0	14 2 14 26	297
γ Virginis 8 Virginis	3·7	14 26	295 307
ζ Virginis	3.4	15 17	297
α Serpentis	2.8	17 4	315
ε Serpentis	3.8	17 19	309
ж Ophiuchi	3.4	18 4	324
λ Ophiuchi	3.9	18 7	303
α Ophiuchi	2.1	18 19	336
β Ophiuchi	2.9	19 11	309
72 Ophiuchi	3.7	19 13	324
γ Aquilæ	2.8	20 47	327
δ Aquilæ	3.4	20 58	305
α Aquilæ	0.9	21 2	321
β Aquilæ	3.9	21 17	313
ε Delphini	4.0	21 30	329
θ Aquilæ	3.4	21 55	295
ε Pegasi	2.5	22 50	324
ζ Pegasi	3.6	23 42	327
α Aquarii	3.2	23 49	296
×			i
		1	
		1	
*			
	•		

L.S.T. Star. Mag. Az. h. m. 60 δ Ceti 4.0 0 52 γ Ceti 3.7 I 4 I 26 1 53 α Ceti 2.8 51 o Tauri 2 II 36 3.8 π³ Orionis ... 3 26 3 30 26 42 3.3 η Orionis ... 3.4 66 8 Orionis ... 61 2.5 3 44 ε Orionis ... 1.7 46 63 3 ζ Orionis ... 2.0 3 49 65 γ Orionis ... 1.7 3 59 44 α Orionis ... I · 2 4 35 40 α Canis Minoris 0.5 10 46 6 13 **B** Canis Minoris 3·1 36 β Cancri ... 3.8 7 7 33 ε Hydræ ... 3.2 7 22 42 ζ Hydræ ... 78 29 3.3 44 o Leonis ... 3.8 39 30 Leonis ... 9 26 3.9 32 β Virginis... 3.8 10 9 55 61 Virginis... 10 32 η 4.0 Virginis... 3.0 10 52 63 δ Virginis... 11 19 51 3.7 ζ Virginis... 11 47 61 3.4 ε Virginis... 3.0 I 2 25 3.8 ε Serpentis 48 14 19 α Serpentis 2.8 14 20 42 λ Ophiuchi 14 50 3.9 55 x Ophiuchi 33 48 15 50 3.4 β Ophiuchi 16 10 2.9 72 Ophiuchi 16 59 3.7 33 ... δ Aquilæ ... 17 47 3.4 53 18 21 0 Aquilæ ... 63 3.4 18 29 β Aquilæ ... 3.9 44 α Aquilæ ... 18 37 0.9 36 γ Aquilæ ... 2.8 18 44 29 ε Delphini 19 35 4.0 27 α Aquarii ... 20 17 62 3.2 γ Aquarii ... 20 29 64 4.0 ε Pegasi ... 2.5 20 36 33 Piscium... 21 38 3.9 53 3.6 21 39 29 ω Piscium... 4.0 22 34 43

St	,,,	L.S.T.	
Star.	Mag.	L.S.T.	Λz.
		h. m.	0
θ Eridani	3.0	1 36	149
υ ⁴ Eridani	3.6	2 28	132
α Horologii	3⋅8	3 4	155
α Columbæ	2.7	3 50	132
β Columbæ	3.5	4 7	136
ζ Canis Majoris	3. I	4 21	123
ε Canis Majoris	1.6	4 57	120
22 Canis Majoris	3.7	4 58	118
δ Canis Majoris	2.0	5 3	115
η Canis Majoris π Argus	2.4	5 23	121
π Argus ζ Argus	2.7	5 37 6 37	139 146
a Mali	2·3 3·7	6 50	129
ψ Argus	3·6	8 5	147
ξ Hydræ	3.7	9 36	126
β Corvi	2.8	10 27	108
ւ Centauri	2.9	11 36	137
π Hydræ	3.5	12 0	115
θ Centauri	2.3	12 22	136
μ Centauri	3.3	12 36	154
η Centauri	2.7	13 18	153
х Centauri	3.4	13 42	153
$\beta Lupi \dots \dots$	2.8	13 49	156
π Scorpii	3.0	13 52	114
113G Lupi	3.0	14 12	150
α Scorpii τ Scorpii	1.2	14 22	115
- Gî::	2.4	14 32 14 59	119
υ Scorpii	2.8	15 49	139
λ Scorpii	1.7	15 51	139
γ Sagittarii	3.1	16 6	124
x Scorpii	2.5	16 9	144
ι¹ Scorpii	3.1	16 19	147
δ Sagittarii	2.8	16 20	123
ε Sagittarii	2.0	16 33	133
η Sagittarii	3.5	16 34	138
φ Sagittarii	3.3	16 40	117
σ Sagittarii	2·I	16 49	115
ζ Sagittarii τ Sagittarii	2.7	17 I	123 118
τ Sagittarii ζ Capricorni	3·4 3·9	17 2 19 19	108
γ Gruis	3.2	20 15	141
α Piscis Australis	1.3	20 57	123
α Phænicis	2.4	23 18	156
			1.5
		}	,
<u></u>		l 	

	1 7		
Star.	Mag.	L. S.T.	Az.
	<u> </u>	h. m.	0
α Piscis Australis		0 49	237
a Phænicis	2.4	1 26	204
0 Eridani	3.0	4 14	211
α Horologii	3.8	5 18 6 2	205
υ ⁴ Eridani α Columbæ	3.6	-	228 228
	2.7	7 24	224
β Columbæ ζ Canis Majoris	3.1	7 29 8 13	237
A	2.7	8 51	22I
π Argus ε Canis Majoris	1.6	8 53	240
22 Canis Majoris	3.7	8 58	242
δ Canis Majoris	2.0	9 7	245
η Canis Majoris	2.4	9 19	239
ζ Argus	2.3	9 25	214
a Mali	3.7	10 30	231
ψ Argus	3.6	10 51	213
ξ Hydræ	3.7	13 22	234
β Corvi	2.8	14 33	252
μ Centauri	3.3	14 54	206
c Centauri	2.9	14 56	223
0 Centauri	2.3	15 42	224
η Centauri	2.7	15 42 15 57	207 20 1
$\beta Lupi \dots \dots$	2.8		245
π Hydræ κ Centauri	3.2	16 4 16 6	245
113G Lupi	3·4 3·0	16 48	210
π Scorpii	3.0	17 56	246
α Scorpii	I·2	18 26	245
τ Scorpii	2.9	18 30	241
ε Scorpii	2.4	18 31	228
υ Scorpii	2.8	19 1	22 I
λ Scorpii	1.7	19 5	221
ж Scorpii	2.2	. 19 5	216
L¹ Scorpii	3.1	19 5	213
η Sagittarii	3.5	19 50	222
γ Sagittarii	3.1	19 56	236
E Sagittarii	2.0	20 5	227
δ Sagittarii	2.8	20 I2 20 42	237
φ Sagittarii σ Sagittarii	3·3	20 42 20 51	243 245
σ Sagittarii ζ Sagittarii	2.7	20 53	237
τ Sagittarii	3.4	2I 2	242
γ Gruis	3.5	23 23	219
γ Gruis ζ Capricorni	3.9	23 25	252
			i
		·	
-			

Star.	Mag.	L. S.T.	Az.
		h. m.	0
γ Aquarii	4.0	05.	296
γ Piscium	3.9	0 48	307
ω Piscium	4.0	1 i6	317
γ Ceti	3.7	4 14	307
δ Ceti	4.0	4 18	300
o Tauri	3.8	4 29	324
α Ceti	2.8	4 30	309
π³ Orionis	3.3	6 4	318
γ Orionis α Orionis	1.7		316
~··	1·2 3·4	7 7 7 10	320 294
η Orionis δ Orionis	2.5	7 12	299
ε Orionis	1.7	7 18	297
ζ Orionis	2.0	7 25	295
β Canis Minoris	3.1	8 33	324
α Canis Minoris	0.5	9 0	314
β Cancri	3.8	9 17	327
ε Hydræ	3.2	IO 2	318
ζ Hydræ	3.3	10 13	316
o Leonis	3.8	10 35	330
ρ Leonis	3.9	II 32	328
β Virginis	3.8	13 23	305
ε Virginis	3.0	13 48	335
η Virginis δ Virginis	4.0	14 0 14 23	299
	3·7	14 24 14 24	309 297
γ Virginis ζ Virginis	3.4	15 15	299
α Serpentis	2.8	17 0	318
ε Serpentis	3.8	17 15	312
х Ophiuchi	3.4	17 58	327
λ Ophiuchi	3.9	18 4	305
72 Ophiuchi	3.7	19 7	327
β Ophiuchi	2.9	19 8	312
γ Aquilæ δ Aquilæ	2.8	.20 40	33 I
	3.4	20 55	307
α Aquilæ β Aquilæ	0.9	20 57	324
' m î 1 ' '	3.9	2I I3 2I 23	316
ε Delphini θ Aquilæ	4·0 3·4	2I 23 2I 53	333 297
ε Pegasi	2.5	22 44	327
ζ Pegasi	3.6	23 35	331
α Aquarii	3.2	·23 47	298
* "		17	
			-
		- 1	
!			

Star.	Mag.	L. S.T.	Az.
Star. δ Ceti	4.0 7 2 .8 3 .3 3 .4 5 7 0 7 2 .7 2 .7 2 .7 2 .7 3 .8 3 .3 3 .4 5 7 4 5 .7 2 .7 3 .4 6 .0 3 .2 3 .4 5 .7 3 .4 5 .9 3 .4 5 .7 3 .4 5 .9 3 .4 5 .7 3 .4 5 .9 3 .4 5 .7 3 .4 5 .9 3 .6 0 2 .8 5 .9 4 .2 5 .5 9 6 .0 2 .0 5 .5 9 6 .0 2 .0 5 .5 9 6 .0 2 .0 5 .5 9 6 .0 2 .0 5 .5 9 6 .0 2 .0 5 .5 9 6 .0 2 .0 5 .5 9 6 .0 2 .0 5 .5 9 6 .0 2 .0 5 .5 9 6 .0 2 .0 5 .5 9 6 .0 2 .0 5 .5 9 6 .0 2 .0 5 .0 5	h. m. 0 54 1 30 2 18 3 34 4 40 6 19 7 14 7 7 34 6 6 19 7 14 23 11 50 6 14 20 14 23 14 25 14 53 15 57 16 14 16 29 6 17 50 18 23 18 34 18 43 18 52 19 43 20 19 20 31 20 43 21 41 21 47 22 39	Az. \$\circ\$ 58 51 48 32 39 64 59 63 41 37 433 329 41 228 528 66 66 45 39 52 96 65 29 66 29 51 25 40
_	ļ		

a.			
Star.	Mag.	L. S.T.	Az.
	<u>'</u> -	h. m.	0.
γ Phænicis	3.4	0 21	157
θ Eridani	3.0	I 29	146
υ ⁴ Eridani	3.6	2 24	130
α Horologii	3.8	2 56	152
α Columbæ β Columbæ	2.7	3 46	130
β Columbæ ζ Canis Majoris	3.2	4 2 4 18	134
ε Canis Majoris	3.1	•	121 119
22 Canis Majoris	3.7	4 54 4 56	116
η Canis Majoris	2.4	5 21	119
v Argus	3.2	5 25	154
π Argus	2.7	5 33	137
σ Argus	3.3	6 17	154
ζ Argus	2.3	6 31	144
a Mali	3.7	6 47	127
λ Argus	2.2	7 55	154
ψ Argus ξ Hydræ	3.6	7 59	145
a Comi	3·7 2·8	9 33 10 25	124 107
ι Centauri	2.9	11 32	135
θ Centauri	2.3	12 17	134
μ Centauri	3.3	12 28	151
η Centauri	2.7	13 11	150
х Centauri	3.4	13 35	150
β Lupi	2.8	13 41	153
113G Lupi	3.0	14 6	147
τ Scorpii	2.9	14 29	117
ε Scorpii υ Scorpii	2·4 2·8	14 55	130
λ Scorpii	1.7	15 44 15 47	137 137
ж Scorpii	2.5	15 47 16 3	142
γ Sagittarii	3·I	16 3	· I22
L¹Scorpii	3.1	16 13	145
δ Sagittarii	2.8	16 17	121
θ Scorpii	2.0	16 21	154
ε Sagittarii	2.0	16 29	131
η Sagittarii	3.2	16 30	136
φ Sagittarii ζ Sagittarii	3·3 2·7	16 38 16 58	115
τ Sagittarii	3.4	17 0	116
ζ Capricorni	3.9	19 17	107
γ Gruis	3.2	20 10	139
α Piscis Australis	1.3	20 55	121
α Phœnicis	2.4	23 10	153
100			
	<u> </u>	l	

Star.	Mag.	L.S.T.	Az.
		h. m.	0
α Piscis Australis	1.3	0 51	239
α Phœnicis	2.4	1 34	207
γ Phænicis	3.4	2 29	203
0 Eridani	3.0	4 21	214
α Horologii	3.8	5 26	208
υ ⁴ Eridani	3.6	6 6	230
α Columbæ	2.7	7 28	230
β Columbæ	3.5	7 34	226
v Argus	3.2	7 45	206
ζ Canis Majoris	3.1	8 16	239
σ Argus	3.3	8 37	206
π Argus	2.7	8 55	223
ε Canis Majoris	1.6	8 56	241
22 Canis Majoris	3.7	9 0	244
η Canis Majoris	2.4	9 21	24I
ζ Argus	2.3	9 31	216
λ Argus	2.2	10 15	206
a Mali	3.7	10 33	233
ψ Argus	3.6	10 57	215
ξ Hydræ	3.7	13 25	236
β Corvi	2.8	14 35	253
Centauri	2.9	15 0	225
μ Centauri	3.3	15 2	209 226
θ Centauri	2.3	15 47	210
η Centauri, β Lupi	2.7	15 49 16 5	207
l ' ~ •	3.4	16 13	210
A T '	3.0	16 54	213
τ Scorpii	2.9	18 33	243
ε Scorpii	2.4	18 35	230
θ Scorpii	2.0	18 41	206
υ Scorpii	2.8	19 6	223
λ Scorpii	1.7	19 9	223
ж Scorpii	2.5	19 11	218
ι¹Scorpii	3·I	19 11	215
ກ Sagittarii	3.2	19 54	224
γ Sagittarii	3.1	19 59	238
ε Sagittarii	2.0	20 9	229
δ Sagittarii	2.8	20 15	239
φ Sagittarii	3.3	20 44	245
ζ Sagittarii	2.7	20 56	239
τ Sagittarii	3.4	21 4	244
ζ Capricorni	3.9	23 27	253
γ Gruis	3.2	23 28	22 I
		Ì	1
A .	Ì		ľ
,			

Star. Mag. L.S.T. Az. γ Aquarii 4.0 0 3 298 γ Piscium 3.9 0 45 309 ω Piscium 3.9 0 45 309 δ Ceti 3.7 4 11 309 δ Ceti 4.0 4 16 302 α Ceti 2.8 4 26 312 π³ Orionis 3.3 5 59 321 γ Orionis 1.7 6 38 319 α Orionis 1.7 6 38 319 α Orionis 1.7 7 16 38 319 α Orionis 1.7 7 16 299 20 7 23 237 η Orionis 1.7 7 16 299 29 7 23 297 297 23 297 23 297 23 297 23 297 23 297 23 297 23 297 23 297 23 297 23
γ Aquarii 4.0 0 3 298 γ Piscium 3.9 0 45 309 ω Piscium 4.0 1 11 320 γ Ceti 3.7 4 11 309 δ Ceti 3.8 4 22 328 α Ceti 2.8 4 26 312 π³ Orionis 3.3 5 59 321 γ Orionis 1.7 6 38 319 α Orionis 1.12 7 2 323 η Orionis 1.12 7 2 323 η Orionis 2.5 7 10 301 ε Orionis 1.7 7 16 299 ζ Orionis 2.0 7 23 2297 β Canis Minoris 3.1 8 27 327 α Canis Minoris 0.5 8 56 317 β Cancri 3.8 9 10 331 ε Hydræ 3.3 10 8 319 ο Leonis
γ Piscium 3.9 0 45 309 ω Piscium 4.0 1 11 320 γ Ceti 3.7 4 11 309 δ Ceti 4.0 4 16 302 ο Tauri 3.8 4 22 328 α Ceti 2.8 4 26 312 π³ Orionis 1.7 6 38 319 α Orionis 1.7 6 38 319 α Orionis 1.7 7 36 38 319 α Orionis 1.7 7 16 299 ζ Orionis 2.5 7 10 301 ε Orionis 1.7 7 16 299 ζ Orionis 1.7 7 16 299 ζ Orionis 2.0 7 23 297 β Canis Minoris 3.1 8 27 327 α Canis Minoris 3.5 9 57 321 ζ Hydræ 3.3 10 8 319 ο Leonis<
ε Delphini 4·0 21 15 338 θ Aquilæ 3·4 21 51 299 ε Pegasi 2·5 22 37 331 ζ Pegasi 3·6 23 27 335

Star.	Mag.	L. S.T.	Az.
δ Ceti γ Ceti α Ceti η Orionis π³ Orionis δ Orionis ζ Orionis α Orionis α Orionis α Orionis α Orionis α Canis Minoris β Canis Minoris β Canis Minoris β Cancri ε Hydræ ζ Hydræ ζ Hydræ ζ Virginis γ Virginis γ Virginis γ Virginis ζ Virginis ζ Virginis ζ Virginis ζ Virginis ζ Virginis ζ Virginis ζ Virginis ζ Virginis ζ Virginis ζ Virginis ζ Ophiuchi ε Serpentis α Serpentis α Ophiuchi ε Ophiuchi χ Ophiuchi χ Ophiuchi χ Ophiuchi χ Ophiuchi χ Ophiuchi χ Ophiuchi χ	4.0 3.7 2.8 3.4 3.3 2.5 1.7 2.0 1.7 1.2 0.5 3.1 4.8 3.3 3.3 3.9 3.9 3.9 3.9 3.9 3.9	h. m. 0 57 1 11 1 34 2 25 3 35 3 37 3 49 3 51 3 53 4 10 6 6 26 6 34 7 22 7 33 7 39 9 42 10 15 10 38 10 57 11 53 13 58 14 22 14 27 14 31 14 56 16 5	56 48 45 28 62 36 57 59 61 37 33 40 29 65 56 45 64 43 64 43 50 50 50 50 50 50 50 50 50 50 50 50 50
λ Ophiuchi κ Ophiuchi β Ophiuchi η Serpentis γ Ophiuchi δ Aquilæ θ Aquilæ β Aquilæ	3·9 3·4 2·9 3·4 3·7 3·4 3·9	14 56 16 5 16 19 16 31 17 14 17 54 18 26 18 39	50 25 43 63 25 48 58 38
α Aquilæ α Aquarii γ Aquarii ε Pegasi γ Piscium ω Piscium	0·9 3·2 4·0 2·5 3·9 4·0	18 51 20 22 20 34 20 51 21 45 22 44	29 57 60 25 48 37

Star. Mag. L. S.T.	
	Az.
h. m.	0
	153
<u> </u>	44
υ ⁴ Eridani 3.6 2 21 1	128
α Horologii 3·8 2 49 1	149
, , , , , , , , , , , , , , , , , , , ,	128
	132
	119
	17
	115
	151
	117 134
	51
	141
	26
	51
ψ Argus 3.6 7 54 1	142
ξ Hydræ 3·7 9 30 1	22
β Corvi 2.8 10 24 1	105
	33
	32
	48
	47
	47
~ ~	50
	44
~ - -	128
	35
	34
	39
	20
ι ¹ Scorpii 3·1 16 8 1	42
θ Scorpii 2·0 16 13 1	51
	119
	34
ε Sagittarii 2·0 16 26 1	29
ζ Sagittarii 2·7 16 56 1	19
τ Sagittarii 3·4 16 58 1 ζ Capricorni 3·9 19 16 1	105
γ Gruis 3.2 20 6 1	36
α Piscis Australis 1-3 20 52 1	19
	50
	٠ ا
la la	

Star.	Mng.	L. S.T.	Az.	
		h. m.	0	
α Piscis Australis	, ,	0 54	24I	
α Phœnicis	2.4	I 42	210	
γ Phœnicis	3.4	2 38	207	
0 Eridani	3.0	4 27	216	1
α Horologii υ ⁴ Eridani	3.8	5 33	211	
α Columbæ	3.6		232	
β Columbæ	2·7 3·2	7 31 7 38	232	
v Argus	3.5		209	
ζ Canis Majoris	3.1	7 53 8 18	241	İ
σ Argus	3.3	8 45	209	
ε Canis Majoris	1.6	8 58	243	
π Argus	2.7	9 0	226	-
22 Canis Majoris	3.7	9 2	245]
η Canis Majoris	2.4	9 24	243	
ζ Argus	2.3	9 37	219	
λ Argus	2.2	10 23	209	ľ
a Mali	3.7	10 36	234	,
ψ Argus	3.6	II 2	218	
ξ Hydræ	3.7	13 28	238	
β Corvi	2.8	14 36	255	
ι Centauri	2.9	15 4	227	
μ Centauri	3.3	15 9	212	
0 Centauri	2.3	15 51	228	
η Centauri	2.7	15 56 16 13	213	
β Lupi κ Centauri	1	16 13	213	
113 G Lupi	3·4 3·0	17 0	216	2
τ Scorpii	2.9	18 35	245	
ε Scorpii	2.4	18 38	232	
θ Scorpii	2.0	18 49	209	
υ Scorpii	2.8	19 11	225	
λ Scorpii	1.7	19 14	226	
х Scorpii	2.5	19 16	22 I	
ι¹Scorpii	3.1	19 16	218	
η Sagittarii	3.5	19 59	226	
γ Sagittarii	3.1	20 2	240	
ε Sagittarii	2.0	20 12	231	
8 Sagittarii	2.8	20 18	241	
ζ Sagittarii	2.7	20 58 21 6	241	
τ Sagittarii	3·4 3·9	23 28	245 255	
ζ Capricorni γ Gruis	3.3	23 32	224	
γ Gruis	"	~J J~	~~4	
		i		
	-			
	<u> </u>			

			,
Star.	Mag.	L. S.T.	Az.
		h. m.	0
γ Aquarii	4.0	0 0	300
γ Piscium	3.9	0 41	312
ω Piscium	4.0	т 6	323
γ Ceti	3.7	4 7	312
δ Ceti	4.0	4 13	304
o Tauri	3.8	4 15	332
α Ceti	2.8	4 22	315
π ³ Orionis	3.3	5 53	324
γ Orionis	1.7	6 32	323
α Orionis	I·2	6 56	327
η Orionis	3.4	7 5	298
δ Orionis	2.2	7 7	303
ε Orionis	1.7	7 13	301
ζ Orionis	2.0	7 21	299
β Canis Minoris	3.1	8 20	331
α Canis Minoris	0.5	8, 21	320
β Cancri	3.8	9 2	335
ε Hydræ	3.2	9 51	324.
ζ Hydræ	3.3	10 3	322
30 Monocerotis	4.0	IO IO	295
ρ Leonis	3.9	11 16	336
β Virginis	3.8	13 17	310
η Virginis δ Virginis	4.0	13 54	304
°	3.7	14 15 14 19	315
γ Virginis ζ Virginis	3·4	14 19 15 9	304
α Serpentis	2.8	16 49	324
ε Serpentis	3.8	17 7	317
μ Serpentis ·	3.6	17 32	296
ж Ophiuchi	3.4	17 43	335
λ Ophiuchi	3.9	17 58	310
δ Ophiuchi	3.0	17 58	296
72 Ophiuchi	3.7	18 52	335
β Ophiuchi	2.9	18 59	317
η Serpentis	3.4	20 3	297
α Aquilæ	0.9	20 43	331
δ Aquilæ	3.4	20 48	312
β Aquilæ	3.9	21 3	322
0 Aquilæ	3.4	21 48	302
ε Pegasi	2.5	22 29	335
α Aquarii	3.2	23 42	303
ļ	Ì		l
[
1		3.0	

Star.	Mag.	L. S. T.	Az.	
		h. m.	0	
δ Ceti	4.0	I O	53	
γ Ceti	3.7	1 15	45	
α Ceti	2.8	1 38	42	
o Tauri	3.8	2 33	24	
β Eridani	2.9	3 14	66	
η Orionis	3.4	3 37	60	
π^3 Orionis	3.3	3 43	32	
δ Orionis	2.2	3 52	54	
ε Orionis	1.7	3 53	56	
ζ Orionis	2.0	3 56	58	
γ Orionis	1.7	4 16	34	
α Orionis α Canis Minoris	1.2	4 53 6 24	30	
β Canis Minoris	3.1	6 34	37 25	
30 Monocerotis	4.0	6 36	62	
ε Hydræ	3.2	7 39	32	
ζ Hydræ	3.3	7 45	34	
β Virginis	3.8	10 19	47	
η Virginis	4.0	10 41	54	
γ Virginis	3.0	II O	56	
δ Virginis	3.7	11 31	42	
ζ Virginis	3.4	11 56	54	
μ Serpentis	3.6	14 0	62	
δ Ophiuchi	3.0	14 24	62	
ε Ophiuchi ε Serpentis	3.3	14 26	65	
ε Serpentis α Serpentis	3.8	14 32 14 37	40	
λ Ophiuchi	3.9	14 3/ 15 O	32 47	
β Ophiuchi	2.9	16 24	40	
η Serpentis	3.4	16 33	61	
λ Aquilæ	3.6	17 12	66	
δ Aquilæ	3.4	17 58	45	
θ Aquilæ	3.4	18 29	56	
β Aquilæ	3.9	18 45	34	
α Aquilæ	0.9	18 59	24	
α Aquarii		20 25	55	
γ Aquarii γ Piscium	4.0	20 37	58	
ω Piscium	3.9	21 49	46 34	
W 1 15010111	1 4 0	22 30	34	
		1]	
	}	_		
		-		
14			1	
-				
		1		

Star.	Mrg.	L. S.T.	Az.
		h. m.	0
γ Phœnicis	3.4		7.50
θ Eridani	3.0	0 4	150 141
υ ⁴ Eridani	3.6	2 18	126
α Horologii	3.8	2 43	146
α Columbæ	2.7	3 40	126
β Columbæ	3.2	3 55	130
ζ Canis Majoris	3·I	4 14	118
ε Canis Majoris	1.6	4 51	115
ν Argus	3.2	5 10	148
η Canis Majoris	2.4	5 16	116
π Argus	2.7	5 24	132
σ Argus	3.3	6 2	148
ζ Argus	2.3	6 20	139
a Mali	3.7	6 41	124
λ Argus	2.2	7 40	148
ψ Argus	3.6	7 49	140
ξ Hydræ	3.7	9 28	121
β Corvi	2.8	10 22	<i>103</i>
ι Centauri	2.9	11 24	131
θ Centauri	2.3	12 9	130
μ Centauri	3.3	12 15	145
η Centauri	2.7	12 58	144
x Centauri	3.4	13 22	144
β Lupi	2.8	13 26	147
113G Lupi	3.0	13 54	142
τ Scorpii	2.9	14 26	113
ε Scorpii	2.4	14 48	126
υ Scorpii	2.8	15 35	133
λ Scorpii	1.7	15 38	132
х Scorpii'	2.2	15 53	137
γ Sagittarii	3.1	15 58	118
ι¹Scorpii	3.1	16 3	140
θ Scorpii	2.0	16 6	148
δ Sagittarii	2.8	16 12	117
η Sagittarii	3.5	16 21	132
ε Sagittarii	2.0	16 23	127
ζ Sagittarii	2.7	16 54	118
ζ Capricorni	3.9	19 14	103
γ Gruis	3.2	20 I	134
α Piscis Australis	1.3	20 50	118
a Phœnicis	2.4	22 55	147
1			

Star.	Mag.	L. S.T.	Az.
		h. m.	•
α Piscis Australis	1.3	0 56	242
α Phœnicis	2.4	1 49	213
γ Phœnicis	3.4	2 46	210
θ Eridani	3.0	4 32	219
α Horologii	3.8	5 39	214
υ ⁴ Eridani	3.6	6 12	234
α Columbæ	2.7	7 34	234
β Columbæ	3.2	7 4I	230
v Argus	3.2	8 0	212
ζ Canis Majoris	3.1	8 20	242
σ Argus	3.3	8 52	212
ε Canis Majoris	1.6	8 59	245 228
π Argus η Canis Majoris	2·7 2·4	9 4 9 26	244
ζ Argus	2.3	9 26	244 22I
λ Argus	2.2	10 30	212
a Mali	3.7	10 39	236
ψ Argus	3.6	11 7	220
ξ Hydræ	3.7	13 30	239
β Corvi	2.8	14 38	257
Centauri	2.9	15 8	229
μ Centauri	3.3	15 15	215
θ Centauri	2.3	15 55	230
η Centauri	2.7	16 2	216
β Lupi	2.8	16 20	213
ж Centauri	3.4	16 26	216
113G Lupi	3.0	17 6	218 247
τ Scorpii	2.9	18 36 18 42	
ε Scorpii θ Scorpii	2.4	18 42 18 56	234
u Scorpii	2.8	19 15	227
λ Scorpii	1.7	19 18	228
ж Scorpii	2.5	19 21	223
ι¹ Scorpii	3.1	19 21	220
η Sagittarii	3.2	2Ó 3	228
γ Sagittarii	3.1	20 4	242
ε Sagittarii	2.0	20 15	233
δ Sagittarii	2.8	20 20	243
ζ Sagittarii	2.7	21 0	242
	3.9	23 30	257
γ Gruis	3.2	23 37	226
- 1			
3.2		!	
		<u> </u>	

19			
Star.	Mag.	L. S.T.	Az.
-		h. m.	0
γ Piscium	3.9	0 37	314
ω Piscium	4.0	10	326
γ Ceti	3.7	4 3	315
o Tauri	3.8	4 7	336
δ Ceti	4.0	4 10 4 18	307
α Ceti π^3 Orionis	2.8		318 328
	3.3	5 47 6 26	326
γ Orionis α Orionis	1.5	6 49	330
β Eridani	2.9	6 54	294
η Orionis	3.4	7 3	300
δ Orionis	2.5	7 4	306
ε Orionis	1.7	7 11	304
ζ Orionis	2.0	7 18	302
β Canis Minoris	3·1	8 12	335
α Canis Minoris	0.2	8 46	323
ε Hydræ	3.2	9 45	328
ζ Hydræ	3.3	9 57 10 8	326 298
30 Monocerotis β Virginis	4·0 3·8	13 13	313
η Virginis	4.0	13 51	306
δ Virginis	3.7	14 11	318
γ Virginis	3.0	14 16	304
ζ Virginis	3.4	15 6	306
α Serpentis	2.8	16 43	328
ε Serpentis	3.8	17 2	320
μ Serpentis	3.6	17 30	298
λ Ophiuchi	3.9	17 54	313
δ Ophiuchi	3.0	17 56 18 2	298
ε Ophiuchi β Ophiuchi	3.3	18 2 18 54	295 320
η Serpentis	2·9	20 I	299
α Aquilæ	0.9	20 35	336
δ Aquilæ	3.4	20 44	315
λ Aquilæ	3.6	20 52	294
β Aquilæ	3.9	20 57	326
θ A quilæ	3.4	21 45	304
α Aquarii	3.2	23 39	305
γ Aquarii	4.0	23 57	302
ļ			Ì
ł			
			1
-			
			i

DRANT SE. QUADRANT

Star.	Mag.	L. S.T.	Az.		Star.	Mag.	L. S.T.	Az.
	i ——	h. m.	0				h. m.	-
δ Ceti	4.0	1 3	51		0 Eridani	3∙0	1 13	139
γ Ceti	3.7	I 20	42		υ ⁴ Eridani	3.6	2 15	124
α Ceti	2.8	I 43	39		α Horologii	3.8	2 37	144
β Eridani	2.9	3 16	64		α Columbæ	2.7	3 37	124
η Orionis	3.4	3 40	57		β Columbæ	3.5	3 52	128
π^3 Orionis	2.9	3 41	<i>66</i> 28	İ	ζ Canis Majoris	3.1	4 12	116
0 O-ii-	3.3	3 50			ν Argus η Canis Majoris	3·2 2·4	5 4 5 14	145
ε Orionis	2.5	3 55 3 56	52 54		_ A	2.7	5 20	114
ζ Orionis	2.0	3 59	56		σ Argus	3.3	5 56	130
γ Orionis	1.7	4 22	30		ζ Argus	2.3	6 16	137
α Orionis	1.2	5 0	26		a Mali	3.7	6 38	122
α Canis Minoris	0.5	6 30	34		λ Argus	2.2	7 34	145
30 Monocerotis	4.0	6 38	60		ψ Argus	3.6	7 44	138
ε Hydræ	3.2	7 46	29		ξ Hydræ	3.7	9 25	119
ζ Hydræ	3.3	7 51	31	0	β Corvi	2.8	10 21	101
β Virginis	3.8	10 24	44		ι Centauri	2.9	II 2I	129
η Virginis γ Virginis	4.0	10 44	51		θ Centauri μ Centauri	2.3	12 6	128
\$ Winginia	3.7	11 3	54	-	` \ \ .	3.3	12 9 12 52	143
ζ Virginis	3.4	11 59	39 51	-	Contour	2·7 3·4	12 52 13 16	142 142
μ Serpentis	3.6	14 3	59		β Lupi	2.8	13 20	144
δ Opĥiuchi	3.0	14 27	66		113G Lupi	3.0	13 49	140
ε Ophiuchi	3.3	14 28	62		ε Scorpii	2.4	14 45	124
ε Serpentis	3.8	14 38	36		υ Scorpii	2.8	15 32	131
α Serpentis	2.8	14 44	29		λ Scorpii	1.7	15 34	130
λ Ophiuchi	3.9	15 5	44		х Scorpii	2.2	15 49	135
β Ophiuchi	2.9	16.29	37		γ Sagittarii	3.1	15 56	116
η Serpentis λ Aquilæ	3.4	16 36	58 64	1	ι¹ Scorpii θ Scorpii	3.1	15 58	138
δ Aquilæ	1	18 3	42	ļ.	0 0:11:	2.8	15 59 16 10	145
θ Aquilæ	1 1 :	18 32	54]	ο Sagittarii	3.2	16 18	130
β Aquilæ	1	18 52	31		ε Sagittarii	2.0	16 20	125
β Aquarii	3.1	19 37	66	\	ζ Sagittarii	2.7	16 52	116
α Aquarii	1 "	20 28	53		α Telescopii	3.8	17 8	154
γ Aquarii		20 39	56	İ	ζ Capricorni	3.9	19 13	101
γ Piscium		21 54	43		γ Gruis	3.2	19 57	132
ω Piscium	4.0	22 57	30	2	α Piscis Australis α Phœnicis		20 48	116
	1			1	Dhamisis	2·4 3·4	22 49 23 57	144
				-	γ Finemeis	34	23 3/	147
	1							
					90			
*					1			
		_						
								=
I	<u> </u>	<u> </u>	<u> </u>	,1		·		par 1

α Piscis Australis α Phœnicis 2 γ Phœnicis 3 0 Eridani 3 α Horologii 3 α Columbæ 3 ζ Calis Majoris ζ Canis Majoris σ Argus 3 π Argus 2 η Canis Majoris ζ Argus 2 α Mali 3 ξ Hydræ 3 ξ Hydræ 3 ξ Centauri 3 ξ Centauri 3 ξ Centauri 3 ξ Corvi 3 ξ Hydræ 3 ξ Hydræ 3 ξ Hydræ 3 ξ Corvi 2 α Mali 3 ξ Hydræ 3 ξ Corvi 2 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Telescopii 3			
α Phœnicis γ Phœnicis α Phœnicis Θ Eridani	lng.	L.S.T.	Az.
α Phœnicis γ Phœnicis α Phœnicis Θ Eridani		h. m.	0
α Phœnicis 2 γ Phœnicis 3 0 Eridani 3 α Horologii 3 α Columbæ 2 β Columbæ 3 ζ Canis Majoris σ Argus 3 π Argus 2 η Canis Majoris ζ Argus 2 α Mali 3 ξ Hydræ 3 β Corvi 2 α Mali 3 ξ Hydræ 3 ξ Centauri 2 α Centauri 2 α Centauri 2 α Centauri 2 α Centauri 2 α Centauri 3 β Corvi 2 α Centauri 3 α Centauri 2 α Centauri 2 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Centauri 3 α Scorpii 3 α Scorpii 3 α Telescopii 3	1.3	0 58	244
Ö Eridani 3 α Horologii 3 υ ⁴ Eridani 3 α Columbæ 2 β Columbæ 3 ν Argus 3 ζ Canis Majoris 3 α Argus 2 λ Argus 2 λ Argus 3 ψ Argus 3 ξ Hydræ 3 β Corvi 2 ι Centauri 2 ψ Centauri 3 ψ Centauri 3 π Centauri 3 π Centauri 3 π Centauri 3 π Centauri 3 π Centauri 3 π Centauri 3 π Centauri 3 π Centauri 3 π Scorpii 3 π Scorpii 3 π Scorpii 3 π Scorpii 3 π Sagittarii 3 π Sagittarii 3 π Sagittarii 3 π Sagittarii 3 π Sagittarii 3 <td>2.4</td> <td>1 55</td> <td>216</td>	2.4	1 55	216
0 Eridani	3·4	2 53	213
υ ⁴ Eridani 3 α Columbæ 2 β Columbæ 3 ν Argus 3 ζ Canis Majoris 3 σ Argus 2 η Canis Majoris 2 ζ Argus 2 λ Argus 3 ψ Argus 3 ξ Hydræ 3 ψ Centauri 2 ψ Centauri 2 ψ Centauri 3 σ Centauri 3 σ Centauri 3 σ Centauri 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3 σ Scorpii 3	3.0	4 37	221
α Columbæ 2 β Columbæ 3 γ Argus 3 ζ Canis Majoris 3 α Argus 2 η Canis Majoris 2 ζ Argus 2 η Canis Majoris 2 ζ Argus 3 κ Argus 3 κ Argus 3 κ Argus 3 κ Argus 3 κ Argus 3 κ Argus 3 κ Argus 3 κ Corvi 2 κ Centauri 3 θ Centauri 3 θ Centauri 3 κ Centauri 3 κ Centauri 3 κ Centauri 3 κ Scorpii 3 κ Scorpii 2 κ Scorpii 2 κ Scorpii 2 κ Scorpii 3 κ Scorpii	3.8	5 45	216
β Columbæ 3 ν Argus 3 ζ Canis Majoris 3 σ Argus 3 π Argus 2 η Canis Majoris 2 ζ Argus 2 λ Argus 3 ψ Argus 3 ξ Hydræ 3 β Corvi 2 ι Centauri 2 μ Centauri 2 η Centauri 2 π Centauri 3 β Corpii 2 κ Centauri 3 σ Centauri 3 σ Centauri 3 η Centauri 3 η Centauri 3 κ Corpii 2 κ Corpii 2 ν Scorpii 2 ν Scorpii 2 ν Scorpii 2 ν Scorpii 3 π Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3	3.6	6 15	236
V Argus 3 Canis Majoris 3 Argus 3 Argus 2 Argus 2 Argus 2 Argus 3 Argus 3 Argus 3 Argus 3 Experiment in the second	2.7	7 37	236
Canis Majoris σ Argus 3 π Argus 2 η Canis Majoris ζ Argus 2 λ Argus 3 ἐ Hydræ 3 ξ Corvi 2 ι Centauri 2 μ Centauri 2 η Centauri 2 π Centauri 3 δ Corpii 2 κ Centauri 3 σ Centauri 3 σ Centauri 3 σ Centauri 3 π Centauri 3 κ Centauri 3 κ Centauri 3 π Centauri 3 κ Centauri 3 κ Scorpii 2 ν Scorpii 2 ν Scorpii 3 κ Scorpii 3	3.2	7 44	232
σ Argus 3 π Argus 2 η Canis Majoris ζ Argus 2 λ Argus 3 μ Argus 3 ξ Hydræ 3 ξ Corvi 2 ι Centauri 2 μ Centauri 2 η Centauri 2 η Centauri 2 χ Centauri 3 δ Lupi 3 ε Scorpii 2 ν Scorpii 2 ν Scorpii 2 ν Scorpii 2 ν Scorpii 2 η Scorpii 2 η Scorpii 2 η Scorpii 3 η Sagittarii 3 η Sagittarii 3 η Sagittarii 3 ς Sagittarii 3 ς Sagittarii 3 ς Sagittarii 3 ς Sagittarii 3 ς Sagittarii 3 ς Sagittarii 3 ς Sagittarii 3	3-2	8 6	215
π Argus 2 η Canis Majoris ζ Argus 2 a Mali 3 ξ Hydræ 3 ξ Hydræ 3 β Corvi 2 ι Centauri 2 μ Centauri 2 η Centauri 2 χ Centauri 2 χ Centauri 2 η Centauri 3 δ Lupi 3 ε Scorpii 2 ν Scorpii 2 ν Scorpii 2 λ Scorpii 2 λ Scorpii 2 χ Scorpii 2 χ Scorpii 3 π Sagittarii 3 χ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3	3·1	8 22	244
η Canis Majoris ζ Argus	3.3	8 58	215
\(\text{Argus} \\ \text{Argus} \\ \text{Argus} \\ \text{a Mali} \\ \text{Argus} \\ \text{a Mali} \\ \text{Argus} \\ \text{Centauri} \\ \text{Argus} \\ \text{Centauri} \\ \text{Argus} \\ \text{Centauri} \\ \text{Argus} \\ \text{Argus} \\ \text{Centauri} \\ \text{Argus} \\ \text{Centauri} \\ \text{Argus} \\ \text{Ceorpii} \\ \text{Argus} \\ \text{Ceorpii} \\ \text{Argus} \\ \text{Capritarii} \\ \text{Argus} \\	2.7	9 8	230
A Argus	2.4	9 28	246
a Mali	2.3	9 46	223
ψ Argus 3 ξ Hydræ 3 β Corvi 2 ι Centauri 2 μ Centauri 2 η Centauri 2 χ Centauri 3 Κ Lupi 3 ε Scorpii 2 υ Scorpii 2 υ Scorpii 2 ν Scorpii 2 ν Scorpii 2 ν Scorpii 2 ν Scorpii 3 π Segittarii 3 χ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3	2.2	10 36	215
ξ Hydræ 3 β Corvi 2 ι Centauri 3 θ Centauri 2 η Centauri 2 κ Centauri 3 113 G Lupi 2 κ Scorpii 2 ν Scorpii 2 λ Scorpii 2 κ Scorpii 3 α Telescopii 3 γ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3 κ Sagittarii 3	3·7 3·6	10 42 11 12	238
β Corvi 2 ι Centauri 2 μ Centauri 3 θ Centauri 2 γ Centauri 3 κ Centauri 3 κ Centauri 3 κ Centauri 3 κ Scorpii 2 ν Scorpii 2 ν Scorpii 2 ν Scorpii 2 ν Scorpii 3 κ Scorpii 3	-	1	24I
t Centauri 2 μ Centauri 3 θ Centauri 2 γ Centauri 2 κ Centauri 3 κ Centauri 3 κ Centauri 3 το Scorpii 2 ν Scorpii 2 ν Scorpii 2 ν Scorpii 2 ν Scorpii 3 κ Scorpii	3·7 2·8	13 33 14 39	259
μ Centauri 3 θ Centauri 2 γ Centauri 2 κ Centauri 3 κ Centauri 3 κ Centauri 3 κ Centauri 3 κ Centauri 3 κ Centauri 3 κ Scorpii 2 ν Scorpii 2 ν Scorpii 2 ν Scorpii 2 κ Scorpii 3 κ Sc	2.9	15 11	231
0 Centauri 2 η Centauri 2 κ Centauri 3 κ Centauri 3 κ Centauri 3 κ Scorpii 2 υ Scorpii 2 λ Scorpii 2 ν Scorpii 2 κ Scorpii 3 κ Scorpi	3.3	15 21	217
7 Centauri 2 β Lupi 2 κ Centauri 3 113 G Lupi 2 θ Scorpii 2 υ Scorpii 2 λ Scorpii 2 κ Scorpii 3 κ Scorpii	2·3	15 58	232
β Lupi 2 κ Centauri 3 113 G Lupi 3 ε Scorpii 2 υ Scorpii 2 λ Scorpii 2 κ Scorpii 3 κ Scorpii 3 κ Scorpii 3 κ Scorpii 3 κ Scorpii 3 κ Sagittarii 3 γ Sagittarii 3 γ Sagittarii 3 κ Sagittarii 2 ζ Capricorni 3	2.7	16 8	218
x Centauri 3 113 G Lupi 3 ε Scorpii 2 θ Scorpii 2 λ Scorpii 2 χ Scorpii 3 α Telescopii 3 γ Sagittarii 3 γ Sagittarii 3 δ Sagittarii 2 ζ Capricorni 3	2·8	16 26	216
113G Lupi 3 ε Scorpii 2 θ Scorpii 2 υ Scorpii 2 λ Scorpii 3 κ Scorpii 3 π Telescopii 3 γ Sagittarii 3 η Sagittarii 3 η Sagittarii 3 ξ Sagittarii 2 ζ Sagittarii 2 ζ Capricorni 3	3.4	16 32	218
E Scorpii 2 θ Scorpii 2 ν Scorpii 2 λ Scorpii 2 ν Scorpii 3 α Telescopii 3 γ Sagittarii 3 η Sagittarii 3 ε Sagittarii 2 δ Sagittarii 2 ζ Capricorni 3	3.0	17 11	220
0 Scorpii 2 υ Scorpii 2 λ Scorpii 2 κ Scorpii 3 α Telescopii 3 γ Sagittarii 3 η Sagittarii 3 ε Sagittarii 2 ξ Sagittarii 2 ζ Capricorni 3	2.4	18 45	236
υ Scorpii 2 λ Scorpii 2 κ Scorpii 3 τ¹ Scorpii 3 α Telescopii 3 γ Sagittarii 3 η Sagittarii 2 δ Sagittarii 2 δ Sagittarii 2 ζ Capricorni 3	2.0	19 3	215
x Scorpii 2 ι¹ Scorpii 3 α Telescopii 3 γ Sagittarii 3 ε Sagittarii 2 δ Sagittarii 2 ζ Sagittarii 2 ζ Capricorni 3	2.8	19 18	229
1 Scorpii 3 α Telescopii 3 γ Sagittarii 3 η Sagittarii 3 ε Sagittarii 2 δ Sagittarii 2 ζ Sagittarii 2 ζ Capricorni 3	1.7	19 22	230
α Telescopii 3 γ Sagittarii 3 η Sagittarii 2 δ Sagittarii 2 ζ Sagittarii 2 ζ Capricorni 3	2.5	19 25	225
γ Sagittarii 3 η Sagittarii 3 ε Sagittarii 2 δ Sagittarii 2 ζ Sagittarii 2 ζ Capricorni 3	3·I	19 26	222
η Sagittarii 2 ε Sagittarii 2 δ Sagittarii 2 ζ Sagittarii 2 ζ Capricorni 3	3-8	19 34	206
Sagittarii 2 δ Sagittarii 2 ζ Sagittarii 2 ζ Capricorni 3	3•I	20 6	244
δ Sagittarii 2 ζ Sagittarii 2 ζ Capricorni 3	3.2	20 6	230
ζ Sagittarii 2 ζ Capricorni 3	2.0	20 18	235
$\zeta Capricorni \dots \mid 3$	2.8	20 22 21 2	*245
	2·7 3·9	21 2 23 31	244 259
y Gruis 3	3.3	23 4I	228
	ے د	~3 4 [*]	""
			1141
			¥
•			
77			

Star.	Mag.	L.S.T.	Az.
		h. m.	0
γ Piscium	3.9	0 32	317
ω Piscium	4.0	0 53	330
γ Ceti	3.7	3 58	318
γ Ceti δ Ceti	4.0	4 7	309
α Ceti	2.8	4 13	321
π^3 Orionis	3.3	5 40	. 332
γ Orionis	1.7	6 20	330
α Orionis	I·2	6 42	334
β Eridani η Orionis	2.9	6 52	296
η Orionis δ Orionis	3·4 2·5	7 O 7 I	303 308
ε Orionis	1.7	7 I 7 8	306
ζ Orionis	2.0	,	304
Orionis	2.9	7 15 7 21	29±
α Canis Minoris	0.5	8 40	326
ε Hydræ	3.2	9 38	331
ζ Hydræ	3.3	9 51	329
30 Monocerotis	4.0	10 6	300
β Virginis	3.8	13 8	316
η Virginis δ Virginis	4.0	13 48	309
	3.7	14 6	321
γ Virginis ζ Virginis	3.0	14 13	306
	3·4 2·8	15 3	309
α Serpentis	3.8	16 36 16 56	331
ε Serpentis μ Serpentis	3.6	17 27	324 301
μ Serpentis λ Ophiuchi	3.9	17 49	316
δ Ophiuchi	3.0	17 53	300
ε Ophiuchi	3.3	18 0	298
β Ophiuchi	2.9	18 49	323
η Serpentis	3.4	19 58	302
δ Aquilæ	3.4	20 39	318
λ Aquilæ	3.6	20 49	296
β Aquilæ	3.9	20 50	329
0 Aquilæ	3.4	21 42	306
β Aquarii	3.1	23 17	29 4
α Aquarii γ Aquarii	3·2 4·0	23 36	307
Y Aquain	4.0	23 55	304
-			
!			l
į			
2			

Star.	Mng.	L.S.T.	Az.	
δ Ceti γ Ceti α Ceti β Eridani η Orionis ι Orionis δ Orionis ε Orionis α Canis Minoris 30 Monocerotis κ Hydræ γ Virginis γ Ophiuchi ε Serpentis λ Aquilæ α Aquilæ	4·0 78 9 4 9 5 3 7.0 7 5 0 5 3 3 4 3 · 0 7 4 6 0 3 3 · 3 · 3 · 3 · 3 · 3 · 3 · 3 · 3 ·	h. m. 1 25 1 49 3 18 3 43 3 58 3 59 4 30 6 41 7 59 10 47 11 42 12 6 14 30 14 44 14 52 15 35 16 39 17 18 8 35 18 35 19 39 20 42 21 59 22 23 23 25 24 25 25 26 26 27 27 28 28 28 29 29 20	• 48 336 554 494 52 46 556 491 578 6 33 561 391 764 6 53 46	

. Star.	Mag.	L.S.T.	Az.
		h. m.	<u> </u>
α Piscis Australis	1.3	1 0	246
α Phœnicis	2.4	2 I	218
β Phœnicis	3.4	2 14	205
γ Phœnicis	3.4	2 59	215
θ Eridani	3.0	4 42	223
α Horologii	3.8	5 51	219
υ ⁴ Eridani	3.6	6 17	238
α Columbæ	2.7	7 39	237
β Columbæ	3.2	7 47	234
v Argus	3.2	8 12	217
ζ Canis Majoris	3.1	8 24	246
σ Argus	3.3	9 4	217
π Argus	2.7	9 11	231
γ Argus	2.2	9 20	205
ζ Argus	2.3	9 51	225
λ Argus a Mali	2.2	10 42 10 44	217
1 A	3·7 3·6	11 17	224
ψ Argus ξ Hydræ	3.7	13 35	243
ζ Centauri	3.1	15 5	206
Centauri	2.9	15 15	233
μ Centauri	3.3	15 27	220
α Lupi	2.9	15 50	206
θ Centauri	2.3	16 1	233
η Centauri	2.7	16 13	220
β Lupi	2.8	16 32	218
x Centauri	3.4	16 37	220
113G Lupi	3.0	17 16	222
ε Scorpii	2.4	18 47	237
θ Scorpii	2.0	19 9	217
υ Scorpii	2.8	19 22	231
λ Scorpii	1.7	19 25	231
x Scorpii	2.5	19 29	227
¹ Scorpii	3.1	19 31	224 209
α Telescopii γ Sagittarii	3.1	19 42	245
~ ~	3.2	20 9	232
ά ΄	2.0	20 21	237
ε Sagittarii ζ Sagittarii	2.7	21 4	246
α Indi	3.2	21 41	204
a Gruis	2.2	23 13	204
γ Gruis	3.2	23 44	230
β Gruis	2.2	23 49	205
* 1		4	
l		l '	

	-		
Star.	Mag.	L.S.T.	Az.
		h. m.	°
γ Piscium	3.9	0 27	320
ω Piscium	4.0	0 45	334
γ Ceti	3.7	3 53	321
δ Ceti	4.0	4 3	312
α Ceti π ³ Orionis	2·8 3·3	4 7 5 32	324 336
γ Orionis	1.7	6 13	334
β Eridani	2.9	6 50	298
η Orionis	3.4	6 57	305
δ Orionis	2.5	6 58	311
ε Orionis	1.7	7 5	308
ζ Orionis	2.0	7 12	306
Conionis	2.9	7 19 8 33	296
α Canis Minoris ε Hydræ	0.2	8 33 9 30	330 335
ζ Hydræ	3.3	9 43	333
30 Monocerotis	4.0	10 3	302
β Virginis	3.8	13 3	319
η Virginis	4.0	13 45	311
δ Virginis	3.7	14 0	324
γ Virginis ζ Virginis	3.0	14 10	309
	3·4 2·8	15 0 16 28	311
α Serpentis ε Serpentis	3.8	16 50	335 327
μ Serpentis	3.6	17 24	303
λ Ophiuchi	3.9	17 44	319
δ Ophiuchi	3.0	17 50	302
ε Ophiuchi	3.3	17 58	300
β Ophiuchi	2.9	18 43	327
η Serpentis δ Aquilæ	3.4	19 55 20 34	304 321
δ Aquilæ β Aquilæ	3·4 3·9	20 34 20 43	333
λ Aquilæ	3.6	20 47	299
θ Aquilæ	3.4	21 39	309
β Aquarii	3.1	23 15	296
α Aquarii	3.2	23 33	310
γ Aquarii	4.0	23 52	307
		l	
ļ			
	7		
*			
	ĺ		
	l		

SE. QUADRANT

				٠, .		•	111/10		
Star.	Mag.	L.S.T.	Az.		Star.		Mag.	L. S.T.	Az.
		h. m.	0	ļ				h. m.	•
δ Ceti	4.0	1 11	46	1	0 Eridani	•••	3.0	1 3	135
γ Ceti	3.7	I 31	36		υ ⁴ Eridani		3.6	2 10	120
α Ceti	2.8	1 56	33	1	α Horologii	•••	3.8	2 26	139
β Eridani	2.9	3 21	60		α Columbæ	•••	2.7	3 32	121
Corionis	2.9	3 45	62		β Columbæ		3.2	3 46	124
η Orionis	3.4	3 46	53	Ī	v Argus		3.2	4 52	141
δ Orionis	2.5	4 2	47	ł	π Argus		2.7	5 14	127
ε Orionis	1.7	4 3	49		σ Argus		3.3	5 44	141
ζ Orionis	2.0	4 5	5 L	Ì	ζ Argus		2.3	6 7	133
30 Monocerotis	4.0	6 44	56		a Mali		3.7	6 33	118
α Canis Minoris	0.5	6 45	26	1	γ Argus		2.2	6 46	152
a Hydra	2.2	7 33	67	1	λ Argus		2.2	7 22	. 141
ζ Hydræ	3.3	8 8	22	,	ψ Argus	•••	3.6	7 35	134
β Virginis	3.8	10 34	38	1	ξ Hydræ		3.7	9 21	115
η Virginis	4.0	10 51	46		ι Centauri	•••	2.9	11 14	125
γ Virginis	3.0	II IO	49		γ Centauri	•••	2.4	11 27	156
δ Virginis	3.7	11 49	33		μ Centauri	•••	3.3	11 58	138
ζ Virginis	3.4	12 6	46		θ Centauri	•••	2.3	12 0	125
μ Serpentis	_	14 9	54		ζ Centauri	•••	3.1	12 27	151
δ Ophiuchi	1 -	14 33	55		η Centauri	••••	2.7	12 42	137
ε Ophiuchi	3.3	14 33	58		к Centauri	•••	3.4	13 6	137
ε Serpentis λ Ophiuchi	3.8	14 51	29		β Lupi	•••	2.8	13 9	140
a Onhinghi	3.9	15 15	38		α Lupi	•••	2.9	13 14	151
in Commentia	3.4	16 42 16 42	29		113G Lupi ε Scorpii	•••	3.0	13 39	135
1 5 4 - 1:3 -	3.6	16 42 17 20	54		α *	•••	2·4 2·8	14 40	121
δ Aquilæ	l	18 14	59 36		. a	•••	1.7	15 25 15 28	127
θ Aquilæ	1 1 1	18 38			х Scorpii	•••	2.5	15 41	127 131
β Aquilæ	3.9	19 8	49 22		θ Scorpii	••••	2.0	15 48	140
β Aquarii	1	19 42	61		ι¹ Scorpii	•••	3·I	15 49	134
α Aquarii	1	20 35	48	1	n Sagittarii		3.2	16 12	126
γ Aquarii	1 7 -	20 45	51	J	ε Sagittarii	•••	2.0	16 14	121
λ Aquarii	1 30	20 57	66		α Telescopii		3.8	16 53	148
γ Piscium	3.9	22 5	36		α Indi		3.2	19 14	153
	` ´			1	γ Gruis		3.2	19 50	129
	1	1			α Gruis		2.2	20 44	153
	ļ	0.0			β Gruis		2.2	21 18	152
		1			α Phœnicis	••••	2.4	22 38	140
	1				β Phœnicis	•••	3.4	23 41	152
		i			γ Phœnicis	•••	3.4	23 45	142
			1						
,				l					
1			'	1					•
+1	0	1		l l	[+ 4
		1		1					,
<u> </u>	1	-	<u> </u>	J	1			·	

LATITUDE 22º SOUTH.

SW. QUADRANT

			,
Star.	Mag.	L. S.T.	Az.
	<u> </u>	h. m.	0
a Piscis Australis	1.3	1 2	248
α Phœnicis	2.4	2 6	220
β Phœnicis	3.4	2 23	208
γ Phœnicis	3.4	3 5	218
θ Eridani	3.0	4 47	225
α Horologii	3.8	5 56	221
υ ⁴ Eridani	3.6	6 20	240
α Columbæ	2.7	7 42	239
β Columbæ	3.2	7 50	236
ν Argus	3.2	8 18	219
σ Argus	3.3	9 10	219
π Argus	2.7	9 14	233
γ Argus	2.2	9 28	208
ζ Argus	2.3	9 55	227
a Mali	3.7	10 47	242
λ Argus	2.2	10 48	219
ψ Argus	3.6	11 21	226
ξ Hydræ	3.7	13 37	245
γ Centauri	2.4	13 47	204
ζ Centauri	3.1	15 13	209
L Centauri	2.9	15 18	235
μ Centauri	3.3	15 32	222
α Lupi	2.9	15 58	209
θ Centauri	2.3	16 4	235
η Centauri	2.7	16 18	223
β Lupi	2.8	16 37	220
x Centauri	3.4	16 42	223
113G Lupi	3.0	17 21	225
ε Scorpii	2.4	18 50	239
θ Scorpii	2.0	19 14	220
υ Scorpii	2.8	19 25	233
λ Scorpii	1.7	19 28	233
х Scorpii	2.2	19 33	229
ι¹ Scorpii	3.1	19 35	226
α Telescopii	3.8	19 49	212
η Sagittarii	3.2	20 12	234
ε Sagittarii	2.0	20 24	239
ζ.Sagittarii	3.7	21 6	248
α Indi	3.5	21 50	207
α Gruis	2.2	23 22	207
γ Gruis	3.2	23 48	231
β Gruis	2.2	23 58	208
		İ	
1			
i			l
		1	į
			ľ
			1

Star.	Mag.	L.S.T.	Az.
		h. m.	٥
Y Piscium	3.9 3.8 3.7 4.8 2.9 5.3 4.2 3.8 4.0 2.9 5.3 4.2 3.8 4.0 3.9 3.4 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9	*	I.
<u> </u>			1

LATITUDE 23° SOUTH.

NE. QUADRANT

L. S.T. Star. Mag. Az. h. m. δ Ceti 1 16 4.0 43 γ Ceti 3.7 I 37 32 α Ceti 2.8 29 2 3 β Orionis ... 65 0.3 3 21 β Eridani ... 57 60 2.9 3 24 ι Orionis ... 3 48 2.9 Orionis ... 3 49 50 3.4 Orionis ... 2.5 4 7 44 7 Orionis ... 1.7 4 47 ζ Orionis ... 2.0 49 30 Monocerotis ... 53 65 79 4.0 47 7 35 9 13 α Hydræ ... 2.2 δ Crateris ... 3.8 β Virginis... 10 40 3.8 35 Virginis... 10 56 4.0 43 Virginis... 3.0 11 14 46 δ Virginis... 11 56 29 3.7 ζ Virginis... I2 II 3.4 43 μ Serpentis 3.6 14 12 52 53 56 δ Ophiuchi 3.0 14 36 ε Ophiuchi 3.3 14 36 ε Serpentis 3.8 14 59 25 λ Ophiuchi 3.9 15 21 35 n Serpentis 16 45 51 3.4 β Opĥiuchi 16 50 25 2.9 λ Aquilæ ... 3.6 17 22 57 δ Aquilæ ... 18 20 32 3.4 46 θ Aquilæ ... 18 42 3.4 β Aquarii ... 19 45 59 3.1 45 48 64 α Aquarii ... 20 39 3.2 γ Aquarii ... 20 49 4.0 λ Aquarii... 3.8 20 59 γ Piscium... θ Ceti ... 3·8 3·8 33 66 22 I I 23 29

SE. QUADRANT

			
Star.	Mag.	L.S.T.	Az.
-		h. m.	0
θ Eridani	3.0	0 59	133
υ ⁴ Eridani	3.6	2 7	119
α Horologii	3.8	2 2 1	137
α Columbæ	2.7	3 29	119
β Columbæ	3.5	3 43	I 2 2
v Argus	3.5	4 47	138
π Argus	2.7	5 10	125
σ Argus	3.3	5 39. 6 3	138
ζ Argus	2.3		131
a Mali	3.7	6 31	116
γ Argus λ Argus	2.2		149
ψ Argus	3.6	7 17	138
μ Argus	2.8	7 31 9 27	132 155
c Centauri	2.9	11 11	123
γ Centauri	2.4	11 17	153
μ Centauri	3.3	11 54	136
θ Centauri	2.3	11 57	123
ζ Centauri	3.1	12 20	148
η Centauri	2.7	12 38	135
х Centauri	3.4	13 2	135
β Lupi	2.8	13 4	138
α Lupi	2.9	13 6	148
113G Lupi	3.0	13 35	133
ε Scorpii	2.4	14 37	119
υ Scorpii	2.8	15 22	125
λ Scorpii	1.7	15 24	125
x Scorpii	2.5	15 37	129
θ Scorpii ι¹Scorpii	2.0	15 43	138
OL 15. 11	3·1	15 45 16 8	132
η Sagittarii ε Sagittarii	2.0	16 12	125 120
α Telescopii	3.8	16 46	146
α Indi	3.2	19 6	150
γ Gruis	3.2	19 47	127
α Gruis	2.2	20 36	150
β Gruis	2.2	21 10	149
α Phœnicis	2.4	22 33	138
β Phœnicis	3.4	23 33	149
γ Phœnicis	3.4	23 40	140
5			
•			
		1	
		·	

LATITUDE 23º SOUTH.

SW. QUADRANT NW. QUADRANT

,			
Star.	Mag.	L. S.T.	Az.
β Gruis α Piscis Australis α Phœnicis β Phœnicis γ Phœnicis θ Eridani	2·2 1·3 2·4 3·4 3·4 3·0	h. m. o 6 1 4 2 11 2 31 3 10 4 51	211 250 222 211 220 227
a Horologii υ ⁴ Eridani α Columbæ β Columbæ ν Argus σ Argus π Argus γ Argus	3·8 3·6 2·7 3·2 3·3 2·7 2·2	6 1 6 23 7 45 7 53 8 23 9 15 9 18 9 36	223 241 241 238 222 222 235 211
γ Argus ζ Argus a Mali λ Argus ψ Argus μ Argus γ Centauri ζ Centauri	2·2 3·7 2·2 3·6 2·8 2·4 3·1	9 59 10 49 10 53 11 25 11 59 13 57	211 229 244 222 228 205 207 212
c Centauri μ Centauri α Lupi θ Centauri η Centauri β Lupi κ Centauri	2·9 3·3 2·9 2·3 2·7 2·8 3·4	15 21 15 36 16 6 16 7 16 22 16 42 16 46	237 224 212 237 225 222 225
s Scorpii θ Scorpii λ Scorpii χ Scorpii κ Scorpii κ Scorpii	3.0 2.4 2.0 2.8 1.7 2.5 3.1	17 25 18 53 19 19 19 28 19 32 19 37 19 39	227 241 222 235 235 231 228
α Telescopii η Sagittarii ε Sagittarii ζ Sagittarii α Indi α Gruis γ Gruis	3.8 3.2 2.0 3.7 3.2 2.2 3.2	19 56 20 16 20 26 21 8 21 58 23 30 23 51	214 235 240 250 210 210 233

Star.	Mag.	L. S.T.	Az.
θ Eridani υ Eridani α Horologii α Columbæ β Columbæ τ Argus τ Argus τ Argus ζ Argus λ Argus λ Argus λ Argus λ Argus μ Argus υ Argus μ Argus ι Centauri ι Centauri γ Centauri	3.0 3.6 3.8 2.7 3.2 2.7 3.3 2.8 2.3 3.7 2.2 2.2 3.6 2.8 2.9 2.9	h. m. 0 56 2 5 2 17 3 27 3 40 4 42 5 7 5 34 5 36 6 0 6 29 6 31 7 12 7 27 9 19 10 49 11 8 11 9	131 117 135 117 121 136 123 136 157 129 115 146 136 130 152 156 121
γ Centauri μ Centauri θ Centauri ς Centauri γ Centauri κ Centauri α Lupi β Lupi 113G Lupi υ Scorpii υ Scorpii ν Scorpii ν Scorpii υ Scorpii ν Scorpii η Sagittarii α Aræ	2·4 3·3 2·3 3·1 2·7 3·4 2·8 3·0 2·4 2·8 1·7 2·5 2·0 3·1 3·2 3·0	11 9 11 50 11 54 12 13 12 34 12 58 12 59 13 0 13 31 14 35 15 19 15 34 15 38 15 41 16 5	150 134 121 146 133 146 136 131 117 124 123 127 136 130 123 154
E Sagittarii α Telescopii α Indi γ Gruis α Gruis β Gruis α Phœnicis γ Phœnicis γ Phœnicis	2·0 3·8 3·2 3·2 2·2 2·4 3·4 3·4	16 9 16 40 18 59 19 44 20 29 21 3 22 29 23 26 23 35	118 143 148 125 147 147 136 146 138

Star.	Mag.	L.S.T.	Az.
	<u> </u>	h. m.	
β Gruis	2.2	0 13	213
a Piscis Australis		1 6	251
α Phœnicis	2.4	2 15	224
β Phœnicis	3.4	2 38	214
γ Phœnicis	3.4	3 15	222
Ö Eridani	3.0	4 54	229
α Horologii	3.8	6 5	225
υ ⁴ Eridani	3.6	6 25	243
α Columbæ	2.7	7 47	243
β Columbæ	3.5	7 56	239
τ Argus	2.8	8 0	203
ν Argus	3.2	8 28	224
σ Argus	3.3	9 20	224
π Argus	2.7	9 21	237
γ Argus	2.2	9 43	214
$\dot{\zeta}$ Argus a Mali	2.3	IO 2	231
	3.7	10 51	245
λ Argus ψ Argus	3.6	, ,	224
ψ Argus μ Argus	2.8	,	208
δ Centauri	2.9	12 7 13 19	204
γ Centauri	2.4	14 5	210
c Centauri	2.9	15 24	239
ζ Centauri	3·1	15 27	214
μ Centauri	3.3	15 40	226
θ Centauri	2.3	16 io	239
α Lupi	2.9	16 13	214
η Centauri	2.7	16 26	227
β Lupi	2.8	16 46	224
к Centauri	3.4	16 50	227
113G Lupi	3.0	17 29	229
α Aræ	3.0	18 43	206
ε Scorpii		18 55	243
θ Scorpii υ Scorpii	2·0 2·8	19 24 19 31	224 236
λ Scorpii	1.7	19 35	237
× Scorpii	2.5	19 40	233
ι¹ Scorpii	3.1	19 43	230
α Telescopii	3.8	20 2	217
η Sagittarii	3.2	20 19	237
ε Sagittarii	2.0	20 29	242
ζ Sagittarii	3.7	21 10	251
α Indi	3.2	22 5	212
α. Gruis	2.2	23 37	213
γ Gruis	3.5	23 54	235
	į		
191			l
- 4			ľ
	<u> </u>	'	

1	1		 ,
Star.	Mag.	L.S.T.	Az.
		h. m.	0
γ Piscium	3.9	o 8	331
λ Aquarii	3.8	0 35	298
ι Ceti	3.8	2 5	295
θ Ceti	3.8	3 8	296
γ Ceti	3.7	3 34	332
α <i>Ceti</i> δ Ceti	2.8	3 45	336
77	4·0 3·8	3 49 5 20	320 294
β Eridani	2.9	6 41	305
δ Orionis	2.5	6 45	319
η Orionis	3.4	6 47	312
ε Orionis	1.7	6 53	316
β Orionis	0.3	6 58	297
ζ Orionis	2.0	7 2	314
ι Orionis	2.9	7 11	303
и Orionis	2.2	7 35	294
30 Monocerotis	4.0	9 54	309
α Hydræ	2.2	II II	297
β Virginis	3.8	12 46	329
η Virginis δ Virginis	4·0 3·7	13 31 13 38	320 336
, ,	3.0	13 58	317
γ Virginis ζ Virginis	3.4	14 46	320
α Virginis	1.2	15 14	291
ε Serpentis	3.8	16 24	341
β Libræ	2.7	17 3	295
μ Serpentis	3.6	17 15	310
λ Ophiuchi	3.9	17 27	329
δ Ophiuchi	3.0	17 41	309
ε Ophiuchi	3.3	17 49	307
• η Serpentis	3·4 3·5	19 46 19 47	311 293
ν <i>Ophiuchi</i> δ Aquilæ	1	20 15	332
δ Aquilæ λ Aquilæ	3·4 3·6	20 39	305
θ Aquilæ	3.4	21 27	317
ε Aquarii	3.8	22 35	293
β Aquarii	3.1	23 7	303
α Aquarii	3.2	23 20	318
γ Aquarii	4.0	23 41	314
•			
(80)			
*			
		}	
		ŀ	
			1

Star. Mag. L. S.T. Az. h. m. δ Ceti 36 4.0 I 27 ε Eridani ... 3.8 I 40 64 8 Eridani ... 3·7 3·7 65 I 49 Ceti1 54 23 Orionis ... 0.3 3 26 61 β Eridani ... 2.9 3 30 52 c Orionis ... 2.9 3 54 55 3 55 х Orionis ... 2.2 64 η Orionis ... 3 58 3.4 45 4 16 ε Orionis ... 1.7 40 δ Orionis ... 2.5 4 17 37 Orionis ... 2.0 4 17 43 30 Monocerotis ... 6 54 48 4.0 Ġι α Hydræ ... 2.2 7 39 9 16 3.8 75 δ Crateris ... β Virginis... 3.8 10 54 27 Virginis... 11 4.0 7 37 Virginis... II 24 3.0 40 1.2 11 29 67 Virginis Virginis... 3.4 I2 2I 37 β Libræ ... 13 26 63 2.7 μ Serpentis 3.6 14 19 47 ζ Ophiuchi 2.7 14 42 66 δ Ophiuchi 48 3.0 14 43 ε Ophiuchi 3.3 14 43 51 λ Ophiuchi 3.9 15 35 27 v Ophiuchi 6 64 16 3.2 n Serpentis 16 52 3.4 46 52 23 λ Aquilæ ... 3.6 17 28 δ Aquilæ ... 3.4 18 37 18 52 θ Aquilæ ... 3.4 40 18 54 ε Aquarii ... 3.8 64 β Aquarii ... 3.1 19 50 54 α Aquarii ... 3.2 20 49 39 4.0 γ Aquarii ... 20 58 42 λ Aquarii ... 3.8 2 I 21 4 22 27 60 γ Piscium... 3.924 63 ι Ceti 3.8 22 27 23 34 61 θ Ceti 3.8 3.9 23 -55 67 \(Ceti

	1	i	<u> </u>
Star.	Mag.	L. S.T.	Az.
	i	h. m.	. •
θ Eridani	. 3.0	0 52	129
υ ⁴ Eridani	. 3.6	2 3	115
α Horologii	3.8	2 13	133
α Columbæ	2.7	3 25	115
β Columbæ	3.2	3 37	119
ν Argus	3.2	4 38	134
π Argus τ Argus	2.7	5 5 5 26	121
τ Argus σ Argus	3.3	5 26 5 30	154
ζ Argus	2.3	5 56	127
γ Argus	2.2	6 25	144
λ Argus	. 2.2	7 8	134
ψ Argus	. 3.6	7 24	128
μ Argus	. 2.8	9 11	149
δ Centauri	. 2.9	10 40	153
γ Centauri	2.4	II 2	148
Centauri	. 2.9	11 6	120
μ Centauri	. 3.3	11 45	132
θ Centauri	2.3	11 52	119
ζ Centauri	3.1	12 7	143
η Centauri α Lupi	2.7	12 30	132
x Centauri	2.9	12 53	144
β Lupi	2.8	12 54 12 56	132 134
113G Lupi	3.0	13 27	130
ε Scorpii	2.4	14 33	116
υ Scorpii	. 2.8	15 16	122
λ Scorpii	. 1.7	15 19	121
х Scorpii	. 2.5	15 31	126
θ Scorpii	2.0	15 34	134
ι¹ Scorpii	. 3·I	15 38	128
α Aræ	3.0	15 58	151
η Sagittarii	3.2	16 3	121
ε Sagittarii α Telescopii	2·0 3·8	16 7	116
ζ Sagittarii	3.7	16 34 16 43	141 107
α Indi	3.2	18 52	145
γ Gruis	3.2	19 41	123
α Gruis	. 2.2	20 22	145
β Gruis	. 2.2	20 57	144
α Phœnicis	. 2.4	22 25	134
β Phœnicis	3.4	23 20	144
γ Phœnicis	3.4	23 30	136
		1.0	
•			
		·	·

1			
Star.	Mag.	L.S.T.	Az.
	<u></u>	h. m.	•
β Gruis	2.2	0 19	216
a Piscis Australis		1 7	253
α Phœnicis	2.4	2 19	226
β Phœnicis	3.4	2 44	216
γ Phœnicis	3.4	3 20	224
θ Eridani	3.0	4 58	231
α Horologii	3.8	6 9	227
υ ⁴ Eridani	3.6	6 27	245
α Columbæ	2.7	7 49	245
β Columbæ	3.2	7 59 8 10	241
τ Argus	2.8		206
ν Argus	3.2	8 32	226
π Argus	2.7	9 23	239
σ Argus	3.3	9 24	226
γ Argus ζ Argus	2.2	9 49	216
	2.3	10 6	233
λ Argus	2.2	II 2	226
ψ Argus	3.6	11 32	232
μ Argus	2.8	12 15	211
δ Centauri	2.9	13 28	207
γ Centauri	2.4	14 12	212
c Centauri	2.9	15 26	240
ζ Centauri	3.1	15 33	217
μ Centauri	3.3	15 45 16 12	228
θ Centauri	2.3		24I 216
α Lupi	2.9	16 19 16 30	228
η Centauri	2.7	16 50	226
β Lupi κ Centauri	3.4	16 54	228
~ + •	3.0	17 33	230
α Aræ	3.0	18 52	209
ε Scorpii	2.4	18 57	244
θ Scorpii	2.0	19 28	226
υ Scorpii	2.8	19 34	238
λ Scorpii	1.7	19 37	239
x Scorpii	2.5	19 43	234
ι¹ Scorpii	3.1	19 46	232
α Telescopii	3.8	20 8	219
n Sagittarii	3.2	20 21	239
ε Sagittarii	2.0	20 31	244
ζ Sagittarii	3.7	21 11	253
α Indi	3.2	22 12	215
α Gruis	2.2	23 44	215
γ Gruis	3.2	23 57	237
*		7	
	- 1	ı	

Star.	Mag.	L.S.T.	Az.
		h. m.	0
λ Aquarii	3.8	0 32	300
c Ceti	3.8	2 3	297
θ Ceti	3.8	3 6	299
γ Ceti ζ Ceti	3.7	3 24	337
ζ <i>Ceti</i> δ Ceti	3.9	3 39	293
ε Eridani	4·0	3 43 5 18	324 296
δ Eridani	3.7	5 29	295
β Eridani	2.9	6 38	308
δ Orionis	2.5	6 39	323
η Orionis	3.4	6 42	315
ε Orionis	1.7	6 48	320
β Orionis	0.3	6 56	299
ζ Orionis	2.0	6 57	317
c Orionis	2.9	7 8	305
κ Orionis	2.2	7 33	296
30 Monocerotis	4.0	9 50	312
α Hydræ β Virginis	2·2	11 9	299
η Virginis	4.0	13 25	333 323
γ Virginis	3.0	13 52	320
ζ Virginis	3.4	14 41	323
α Virginis	1.2	15 13	293
β Libræ	2.7	17 0	297
μ Serpentis	3.6	17 11	313
λ Ophiuchi	3.9	17 19	333
δ Ophiuchi	3.0	17 37	312
ε Ophiuchi	3·3 2·7	17 45	309 294
ζ Ophiuchi η Serpentis		18 24	
η Serpentis ν Ophiuchi	3·4 3·5	19 42	314 296
δ Aquilæ	3·4	20 5	337
λ Aquilæ	3.6	20 36	308
θ Aquilæ	3.4	21 22	320
ε Aquarii	3·8	22 32	296
β Aquarii	3·1	23 4	306
α Aquarii	3.5	23 15	321
γ Aquarii	4.0	23 36	318
γ Piscium	3.9	23 59	336
(h			
÷ i			
	:		
		<u> </u>	<u> </u>

Star.	Mag.	L. S.T.	Az.
		h. m.	0
θ Eridani	3.0	0 48	127
φ Eridani	3.8	0 54	155
υ ⁴ Eridani	3.6	2 1	114
α Horologii	3.8	2 8	131
a Columba	2.7	3 23	114
β Columbæ	3.2	3 35	117
v Argus	3.5	4 34	132
π Argus	2.7	5 2	120
τ Argus	2.8	5 18	151
σ Argus	3.3	5 26	132
ζ Argus	2.3	5 53 6 19	125
γ Argus	2.2	-	142
λ Argus	2.2	7 4	132
ψ Argus μ Argus	3·6 2·8	7 20	126
6 U	2.0	9 4 10 32	146 150
γ Centauri	2.4		
c Centauri	2.9	10 55 11 4	145
μ Centauri	3.3	11 41	130
θ Centauri	2.3	11 49	118
ζ Centauri	3.1	12 I	141
η Centauri	2.7	12 26	130
α Lupi	2.9	12 47	141
х Centauri	3.4	12 50	130
β Lupi :	2.8	12 51	132
113 G Lupi	3.0	13 24	128
ζ Lupi	3.2	13 45	155
ε Scorpii	2.4	14 31	114
υ Scorpii	2.8	15 13	120
λ Scorpii ·	1.7	15 16	I 20
ж Scorpii	2.5	15 28	124
θ Scorpii	2.0	15 29	132
ι¹ Scorpii	3.1	15 34	126
α. Aræ	3.0	15 50	149
η Sagittarii	3.2	16 0	119
ε Sagittarii	2·0 3·8	16 5 16 29	114
α Telescopii ζ Sagittarii	3·8 3·7	16 29 16 42	139
α Indi		18 46	106
γ Gruis	3·2	19 38	143 121
α Gruis	2.2	20 16	142
β Gruis	2.2	20 51	142
ε Gruis	3.7	21 22	154
α Phœnicis	2.4	22 20	132
β Phœnicis	3.4	23 14	142
γ Phœnicis	3.4	23 25	134
=	•		- •
100			

Star.	Mag.	L.S.T.	Az.
			<u> </u>
1 ~ .		h. m.	٥
γ Gruis ε Gruis	3.2	0 0	239 206
ε Gruis β Gruis	3·7 2·2		218
a Piscis Australis	1.3	0 25	254
α Phœnicis	2.4	2 24	228
β Phœnicis	3.4	2 50	218
γ Phœnicis	3.4	3 25	226
φ Eridani	3.8	3 34	205
θ Eridani	3.0	5 2	233
α Horologii	3.8	6 14	229
υ ⁴ Eridani	3.6	6 29	246
a Columba	2.7	7 51	246
β Columbæ	3·2 2·8	8 I 8 I	243
τ Argus ν Argus	3.5	8 36	209
π Argus	2.7	9 26	240
σ Argus	3.3	9 28	228
1 0	2.2	9 55	218
γ Argus ζ Argus	2.3	10 9	235
λ Argus	2.2	11 6	228
ψ Argus	3.6	11 36	234
μ Argus	2.8	12 22	214
δ Centauri	2.9	13 36	210
γ Centauri	2.4	14 19	215
Centauri	2.9	15 28	242
ζ Centauri	3·1	15 39	219
μ Centauri θ Centauri	3.3	15 49 16 15	230 242
α Lupi	2.9	16 25	219
ζ Lupi	3.2	16 27	205
η Centauri	2.7	16 34	230
β Lupi	2.8	16 55	228
x Centauri	3.4	16 58	230
113 G Lupi	3.0	17 36	232
ε Scorpii	2.4	18 59	246
α Aræ	3.0	19 0	211 228
θ Scorpii	2.0	19 33	228 240
υ Scorpii λ Scorpii	1.7	19 37 19 40	240
x Scorpii	2.5	29 46	236
ι¹ Scorpii	3·I	19 50	234
α Telescopii	3.8	20 13	22 I
n Sagittarii	3.2	20 24	241
ε Sagittarii	$2 \cdot 0$	20 33	246
ζ Sagittarii	3.7	21 12	254
α Indi	3.5	22 18	217
α Gruis	2.2	23 50	218
	ļ	1 1	
<u></u>			

Star. Mag. L.S.T. Az. λ Aquarii 3.8 0 29 302 ι Ceti 3.8 2 1 299 θ Ceti 3.8 3 3 301 ζ Ceti 3.9 3 37 328 ε Eridani 3.8 5 16 298 δ Eridani 3.7 5 27 297 δ Orionis 2.5 6 33 326 β Eridani 2.9 6 35 310 η Orionis 2.9 6 35 310 η Orionis 2.9 6 35 310 η Orionis 2.9 6 52 320 β Orionis 2.0 6 52 320 β Orionis 2.0 6 52 320 β Orionis 2.0 7 5 308 κ Orionis 2.0 7 5 308 κ Orionis 2.2 7 31 298 30 Monocerotis 4.0 9 45 315 κ Hydræ 2.2 11 6 302				
λ Aquarii 3.8 0 29 302 ι Ceti 3.8 2 1 299 θ Ceti 3.8 3 3 301 ζ Ceti 3.9 3 37 296 δ Ceti 4.0 3 37 328 ε Eridani 3.8 5 16 298 δ Eridani 3.7 5 27 297 δ Orionis 2.5 6 33 326 β Eridani 2.9 6 35 310 η Orionis 3.4 6 37 318 ε Orionis 1.7 6 42 323 ζ Orionis 1.7 6 42 323 ζ Orionis 2.0 6 52 320 β Orionis 2.0 6 52 320 β Orionis 2.9 7 5 308 κ Orionis 2.9 7 5 308 κ Orionis 2.9 7 5 308 κ Orionis 2.9 7 5 308 κ Orionis 2.2 7 31 298 30 Monocerotis 4.0 9 45 315 α Hydræ 2.2 11 6 302 β Virginis 3.8 12 29 338 η Virginis 3.8 12 29 338 η Virginis 3.9 13 46 324 ζ Virginis 3.0 13 46 324 ζ Virginis 3.0 13 46 324 ζ Virginis 3.0 13 46 324 ζ Virginis 3.0 13 46 324 ζ Virginis 3.0 13 46 324 ζ Virginis 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338	Star.	Mag.	L.S.T.	Az.
ι Ceti 3·8 2 1 299 θ Ceti 3·8 3 3 or ζ Ceti 3·9 3 37 296 δ Ceti 4·0 3 37 328 ε Eridani 3·8 5 16 298 δ Eridani 3·7 5 27 297 δ Orionis 2·5 6 33 326 β Eridani 2·9 6 35 310 η Orionis 2·9 6 35 310 η Orionis 2·9 6 35 310 η Orionis 2·0 6 52 320 β Orionis 2·0 6 52 320 β Orionis 2·0 6 53 302 ι Orionis 2·9 7 5 308 α Orionis 2·9 7 5 308 α Orionis 2·2 7 31 298 α Orionis 2·2 7 31 <			h. m.	0
θ Ceti 3.8 3 3 or 296 δ Ceti 3.9 3 37 296 δ Ceti 4.0 3 37 328 ε Eridani 3.8 5 16 298 δ Eridani 3.7 5 27 297 δ Orionis 2.5 6 33 326 β Eridani 2.9 6 35 310 η Orionis 2.9 6 35 310 η Orionis 2.0 6 52 320 β Orionis 2.0 6 52 320 β Orionis 2.0 6 53 302 ι Orionis 2.0 6 53 302 ι Orionis 2.9 7 5 308 κ Orionis 2.2 7 31 298 30 Monocerotis 4.0 9 45 315 α Hydræ 2.2 11 6 302 γ Virginis 3.8	λ Aquarii	3.8	0 29	302
θ Ceti 3.8 3 3 or 296 δ Ceti 3.9 3 37 296 δ Ceti 4.0 3 37 328 ε Eridani 3.8 5 16 298 δ Eridani 3.7 5 27 297 δ Orionis 2.5 6 33 326 β Eridani 2.9 6 35 310 η Orionis 2.9 6 35 310 η Orionis 2.0 6 52 320 β Orionis 2.0 6 52 320 β Orionis 2.0 6 53 302 ι Orionis 2.0 6 53 302 ι Orionis 2.9 7 5 308 κ Orionis 2.2 7 31 298 30 Monocerotis 4.0 9 45 315 α Hydræ 2.2 11 6 302 γ Virginis 3.8		3.8	2 I	299
ζ Ceti 3·9 3 37 296 δ Ceti 4·0 3 37 328 ε Eridani 3·8 5 16 298 δ Eridani 3·7 5 27 297 δ Orionis 2·5 6 33 326 β Eridani 2·9 6 35 310 η Orionis 2·9 6 35 310 η Orionis 2·0 6 52 320 β Orionis 2·0 6 52 320 β Orionis 2·0 6 53 302 ι Orionis 2·9 7 5 308 κ Orionis 2·9 7 5 308 κ Orionis 2·9 7 5 308 κ Orionis 2·9 7 5 308 κ Orionis 2·2 7 31 298 κ Orionis 2·2 7 31 298 κ Orionis 2·2 7 31 298 </td <td>θ Ceti</td> <td>3.8</td> <td>3 3</td> <td>301</td>	θ Ceti	3.8	3 3	301
8 Ceti 4.0 3 37 328 E Eridani 3.8 5 16 298 8 Eridani 3.7 5 27 297 8 Orionis 2.5 6 33 326 β Eridani 2.9 6 35 310 η Orionis 2.9 6 35 310 η Orionis 2.0 6 37 318 ε Orionis 2.0 6 52 320 β Orionis 2.0 6 52 320 β Orionis 2.0 6 52 320 β Orionis 2.2 7 31 298 χ Orionis 2.2 7 31 298 χ Orionis 2.2 7 31 298 χ Orionis 2.2 7 31 298 χ Orionis 2.2 7 31 298 χ Orionis 2.2 7 31 298 γ Virginis 3.8 12 29 338 η Virginis 3.8 12 29 338 η Virginis 3.0 13 46 324 ζ Virginis 3.0 13 46 324 ζ Virginis 3.4 14 34 327 γ Virginis 3.4 14 34 327 χ Virginis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 10 329 δ Ophiuchi 3.9 17 33 315 δ Ophiuchi 3.9 17 33 315 δ Ophiuchi 3.9 17 33 315 δ Ophiuchi 3.9 17 33 315 δ Ophiuchi 3.9 17 33 315 δ Ophiuchi 3.9 17 33 315 δ Ophiuchi 3.9 17 33 315 δ Ophiuchi 3.9 32 32 32 32 32 32 32 32 32 32 32 32 32	ζ Ceti			296
E Eridani 3.8 5 16 298 8 Eridani 3.7 5 27 297 8 Orionis 2.5 6 33 326 β Eridani 2.9 6 35 310 η Orionis 3.4 6 37 318 ε Orionis 1.7 6 42 323 ζ Orionis 2.0 6 52 320 β Orionis 2.0 6 52 320 β Orionis 2.9 7 5 308 χ Orionis 2.9 7 5 308 χ Orionis 2.2 7 31 298 30 Monocerotis 4.0 9 45 315 α Hydræ 2.2 11 6 302 β Virginis 3.8 12 29 338 η Virginis 3.8 12 29 338 η Virginis 3.0 13 46 324 ζ Virginis 3.4 14 34 327 γ Virginis 3.4 14 34 327 α Virginis 3.4 14 34 327 α Virginis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 37 317 γ Ophiuchi 3.5 19 42 298 λ Aquarii 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.7 2 23 9 325	δ Ceti			328
8 Eridani 3.7 5 27 297 8 Orionis 2.5 6 33 326 β Eridani 2.9 6 35 310 η Orionis 3.4 6 37 318 ε Orionis 1.7 6 42 323 ζ Orionis 2.0 6 52 320 β Orionis 2.0 6 53 302 ι Orionis 2.9 7 5 308 χ Orionis 2.2 7 31 298 30 Monocerotis 4.0 9 45 315 α Hydræ 2.2 11 6 302 β Virginis 3.8 12 29 338 η Virginis 3.8 12 29 338 η Virginis 3.0 13 46 324 ζ Virginis 3.4 14 34 327 γ Virginis 3.4 14 34 327 α Virginis 3.4 14 34 327 α Virginis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 31 312 ζ Ophiuchi 3.9 17 31 312 ζ Ophiuchi 3.9 17 31 312 ζ Ophiuchi 3.9 32 330 δ Aquarii 3.9 32 330 δ Aquarii 3.9 32 330 δ Aquarii 3.9 32 330				298
8 Orionis 2.5 6 33 326 β Eridani 2.9 6 35 310 η Orionis 3.4 6 37 318 ε Orionis 1.7 6 42 323 ζ Orionis 2.0 6 52 320 β Orionis 2.0 6 52 320 β Orionis 2.9 7 5 308 χ Orionis 2.2 7 31 298 30 Monocerotis 4.0 9 45 315 α Hydræ 2.2 11 6 302 β Virginis 3.8 12 29 338 η Virginis 3.8 12 29 338 η Virginis 3.0 13 46 324 ζ Virginis 3.4 14 34 327 χ Virginis 3.4 14 34 327 χ Virginis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 312 ζ Ophiuchi 3.9 17 10 312 ζ Ophiuchi 3.9 17 10 312 ζ Ophiuchi 3.9 17 10 315 ε Ophiuchi 3.9 17 10 37 317 γ Ophiuchi 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.7 2 23 9 325	δ Eridani	3.7		297
7 Orionis 3.4 6 37 318 ε Orionis 1.7 6 42 323 ζ Orionis 2.0 6 52 320 β Orionis 2.0 6 53 302 ι Orionis 2.9 7 5 308 χ Orionis 2.9 7 5 308 χ Orionis 2.2 7 31 298 30 Monocerotis 4.0 9 45 315 α Hydræ 2.2 11 6 302 β Virginis 3.8 12 29 338 η Virginis 3.0 13 46 324 ζ Virginis 3.0 13 46 324 ζ Virginis 3.4 14 34 327 α Virginis 3.4 14 34 327 α Virginis 1.2 15 11 296 β Libræ 2.7 16 58 300 μ Serpentis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.0 17 33 315 ε Ophiuchi 3.1 23 1 312 ζ Ophiuchi 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.8 22 30 298 β Aquarii 3.1 23 1 308 α Aquarii 3.2 23 9 325			6 33	
E Orionis 1.7 6 42 323 ζ Orionis 2.0 6 52 320 β Orionis 2.0 6 53 302 ι Orionis 2.9 7 5 308 χ Orionis 2.2 7 31 298 30 Monocerotis 4.0 9 45 315 α Hydræ 2.2 11 6 302 β Virginis 3.8 12 29 338 η Virginis 3.0 13 46 324 ζ Virginis 3.4 14 34 327 α Virginis 1.2 15 11 296 β Libræ 1.2 15 11 296 β Libræ 2.7 16 58 300 μ Serpentis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 41 312 ζ Ophiuchi 3.9 17 41 312 ζ Ophiuchi 3.9 17 41 312 ζ Ophiuchi 3.5 19 42 298 λ Aquilæ 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.7 2 23 9 325	β Eridani	2.9		310
ζ Orionis 2.0 6 52 320 β Orionis 0.3 6 53 302 ι Orionis 2.9 7 5 308 χ Orionis 2.2 7 31 298 30 Monocerotis 4.0 9 45 315 α Hydræ 2.2 11 6 302 β Virginis 3.8 12 29 338 η Virginis 4.0 13 19 327 γ Virginis 4.0 13 19 327 γ Virginis 3.4 14 34 327 χ Virginis 3.4 14 34 327 α Virginis 1.2 15 11 296 β Libræ 2.7 16 58 300 μ Serpentis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.0 17 33 315 ε Ophiuchi 3.0 17 33 315 ε Ophiuchi 3.0 17 33 315 γ Ophiuchi 3.0 17 33 317 γ Ophiuchi 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.7 2 23 9 325	η Orionis	3.4		318
β Orionis 0·3 6 53 302 1 Orionis 2·9 7 5 308 2 Orionis 2·9 7 5 308 2 Orionis 2·2 7 31 298 30 Monocerotis 4·0 9 45 315 α Hydræ 2·2 11 6 302 β Virginis 3·8 12 29 338 η Virginis 3·8 12 29 338 η Virginis 3·0 13 46 324 ζ Virginis 3·1 14 34 327 α Virginis 3·1 15 11 296 β Libræ 1·2 15 11 296 β Libræ 2·7 16 58 300 μ Serpentis 3·6 17 6 316 λ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·1 17 41 312 ζ Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 23 1 308 α Aquarii 3·1 23 1 308 α Aquarii 3·2 23 9 325		1.7	6 42	
t Orionis 2.9 7 5 308 x Orionis 2.2 7 31 298 30 Monocerotis 4.0 9 45 315 α Hydræ 2.2 11 6 302 β Virginis 3.8 12 29 338 η Virginis 3.0 13 46 324 ζ Virginis 3.0 13 46 324 ζ Virginis 3.1 14 34 327 α Virginis 1.2 15 11 296 β Libræ 1.2 15 11 296 β Libræ 2.7 16 58 300 μ Serpentis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.3 17 41 312 ζ Ophiuchi 3.3 17 41 312 ζ Ophiuchi 3.5 19 42 298 λ Aquilæ 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.7 2 23 9 325	ζ Orionis	2.0	6 52	
x Orionis 2·2 7 31 298 30 Monocerotis 4·0 9 45 315 α Hydræ 2·2 11 6 302 β Virginis 3·8 12 29 338 η Virginis 3·0 13 19 327 γ Virginis 3·0 13 46 324 ζ Virginis 3·1 14 34 327 α Virginis 1·2 15 11 296 β Libræ 1·2 15 11 296 β Libræ 2·7 16 58 300 μ Serpentis 3·6 17 6 316 λ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·1 17 41 312 ζ Ophiuchi 3·3 17 41 312 ζ Ophiuchi 3·3 17 41 312 ζ Ophiuchi 3·5 19 42 298 λ Aquilæ 3·6 20 32 310 θ Aquilæ 3·6 20 32 310 θ Aquilæ 3·6 20 32 310 θ Aquilæ 3·8 22 30 298 β Aquarii 3·8 22 30 298 β Aquarii 3·1 23 1 308 α Aquarii 3·2 23 9 325	β Orionis	0.3	6 53	302
30 Monocerotis 4·0 9 45 315 α Hydræ 2·2 11 6 302 β Virginis 3·8 12 29 338 η Virginis 3·0 13 19 327 γ Virginis 3·0 13 46 324 ζ Virginis 3·1 14 34 327 α Virginis 1·2 15 11 296 β Libræ 2·7 16 58 300 μ Serpentis 3·6 17 6 316 λ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·9 17 33 315 ξ Ophiuchi 3·1 17 41 312 ζ Ophiuchi 3·1 19 37 317 ν Ophiuchi 3·1 19 37 317 ν Ophiuchi 3·1 19 37 317 ν Ophiuchi 3·1 19 37 317 ν Ophiuchi 3·1 19 37 317 γ Ophiuchi 3·1 2·2 298 λ Aquilæ 3·1 2·2 298 β Aquarii 3·1 2·2 30 298 β Aquarii 3·1 2·2 3 1 308 α Aquarii 3·2 2·3 9 325		2.9		
α Hydræ 2·2 11 6 302 β Virginis 3·8 12 29 338 η Virginis 4·0 13 19 327 γ Virginis 3·0 13 46 324 ζ Virginis 3·4 14 34 327 α Virginis 1·2 15 11 296 β Libræ 2·7 16 58 300 μ Serpentis 3·6 17 6 316 λ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·0 17 33 315 ε Ophiuchi 3·3 17 41 312 ζ Ophiuchi 3·4 19 37 317 ν Ophiuchi 3·5 19 42 298 λ Aquilæ 3·6 20 32 310 θ Aquilæ 3·8 22 30				
β Virginis 3·8 12 29 338 η Virginis 4·0 13 19 327 γ Virginis 3·0 13 46 324 ζ Virginis 3·4 14 34 327 α Virginis 1·2 15 11 296 β Libræ 2·7 16 58 300 μ Serpentis 3·6 17 6 316 λ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·0 17 33 315 ε Ophiuchi 3·3 17 41 312 ζ Ophiuchi 3·3 17 41 312 ζ Ophiuchi 3·4 19 37 317 ν Ophiuchi 3·5 19 42 298 λ Aquilæ 3·6 20 32 310 θ Aquilæ 3·4 21 16 323 ε Aquarii 3·1 23 1 308 β Aquarii <td< td=""><td>30 Monocerotis</td><td>4.0</td><td></td><td></td></td<>	30 Monocerotis	4.0		
γ Virginis 4.0 13 19 327 γ Virginis 3.0 13 46 324 ζ Virginis 3.4 14 34 327 α Virginis 1.2 15 11 296 β Libræ 2.7 16 58 300 μ Serpentis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.1 17 41 312 ζ Ophiuchi 2.7 18 22 296 η Serpentis 3.4 19 37 317 ν Ophiuchi 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 30 298 β Aquarii 3.8 22 30 298 β Aquarii 3.1 23 1 308 α Aquarii 3.2 23 9 325			_	
γ Virginis 3.0 13 46 324 ζ Virginis 3.4 14 34 327 α Virginis 1.2 15 11 296 β Libræ 2.7 16 58 300 μ Serpentis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.3 17 41 312 ζ Ophiuchi 2.7 18 22 296 η Serpentis 3.4 19 37 317 ν Ophiuchi 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.8 22 30 298 β Aquarii 3.8 22 30 298 β Aquarii 3.1 23 1 308 α Aquarii 3.2 23 9 325	• ==. •			1
ζ Virginis 3·4 14 34 327 α Virginis 1·2 15 11 296 β Libræ 2·7 16 58 300 μ Serpentis 3·6 17 6 316 λ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·0 17 33 315 ε Ophiuchi 3·3 17 41 312 ζ Ophiuchi 2·7 18 22 296 η Serpentis 3·4 19 37 317 ν Ophiuchi 3·5 19 42 298 λ Aquilæ 3·6 20 32 310 θ Aquilæ 3·4 21 16 323 ε Aquarii 3·1 23 1 308 α Aquarii 3·2 23 9 325				
α Virginis 1·2 15 11 296 β Libræ 2·7 16 58 300 μ Serpentis 3·6 17 6 316 λ Ophiuchi 3·9 17 10 338 δ Ophiuchi 3·0 17 33 315 ε Ophiuchi 2·7 18 22 296 γ Serpentis 3·4 19 37 317 ν Ophiuchi 3·5 19 42 298 λ Aquilæ 3·6 20 32 310 θ Aquilæ 3·6 20 32 310 θ Aquilæ 3·8 22 30 298 β Aquarii 3·1 23 1 308 α Aquarii 3·2 23 9 325	γ Virginis		-	-
β Libræ 2.7 16 58 300 μ Serpentis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.0 17 33 315 ε Ophiuchi 3.3 17 41 312 ζ Ophiuchi 2.7 18 22 296 η Serpentis 3.4 19 37 317 ν Ophiuchi 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.8 22 30 298 β Aquarii 3.8 22 30 298 β Aquarii 3.1 23 1 308 α Aquarii 3.2 23 9 325	ζ Virginis			
μ Serpentis 3.6 17 6 316 λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.0 17 33 315 ε Ophiuchi 3.3 17 41 312 ζ Ophiuchi 2.7 18 22 296 η Serpentis 3.4 19 37 317 ν Ophiuchi 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 θ Aquilæ 3.8 22 30 298 β Aquarii 3.8 22 30 298 β Aquarii 3.1 23 1 308 α Aquarii 3.2 23 9 325				- 1
λ Ophiuchi 3.9 17 10 338 δ Ophiuchi 3.0 17 33 315 ε Ophiuchi 3.3 17 41 312 ζ Ophiuchi 2.7 18 22 296 η Serpentis 3.4 19 37 317 ν Ophiuchi 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.4 21 16 323 ε Aquarii 3.8 22 30 298 β Aquarii 3.1 23 1 308 α Aquarii 3.2 23 9 325				
δ Ophiuchi 3.0 17 33 315 ε Ophiuchi 3.3 17 41 312 ζ Ophiuchi 2.7 18 22 296 η Serpentis 3.4 19 37 317 ν Ophiuchi 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.6 20 32 310 ε Aquarii 3.8 22 30 298 β Aquarii 3.1 23 1 308 α Aquarii 3.2 23 9 325	μ Serpentis		17 0	310
ε Ophiuchi 3·3 17 41 312 ζ Ophiuchi 2·7 18 22 296 η Serpentis 3·4 19 37 317 ν Ophiuchi 3·5 19 42 298 λ Aquilæ 3·6 20 32 310 θ Aquilæ 3·4 21 16 323 ε Aquarii 3·8 22 30 298 β Aquarii 3·1 23 1 308 α Aquarii 3·2 23 9 325	A Ophiuchi			
ζ Ophiuchi 2·7 18 22 296 η Serpentis 3·4 19 37 317 ν Ophiuchi 3·5 19 42 298 λ Aquilæ 3·6 20 32 310 θ Aquilæ 3·4 21 16 323 ε Aquarii 3·8 22 30 298 β Aquarii 3·1 23 1 308 α Aquarii 3·2 23 9 325	o Opniuchi			
η Serpentis 3.4 19 37 317 ν Ophiuchi 3.5 19 42 298 λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.4 21 16 323 ε Aquarii 3.8 22 30 298 β Aquarii 3.1 23 1 308 α Aquarii 3.2 23 9 325	ε Opniuchi	- 1		
ν Ophiuchi 3·5 19 42 298 λ Aquilæ 3·6 20 32 310 θ Aquilæ 3·4 21 16 323 ε Aquarii 3·8 22 30 298 β Aquarii 3·1 23 1 308 α Aquarii 3·2 23 9 325				
λ Aquilæ 3.6 20 32 310 θ Aquilæ 3.4 21 16 323 ε Aquarii 3.8 22 30 298 β Aquarii 3.1 23 1 308 α Aquarii 3.2 23 9 325				
θ Aquilæ 3·4 21 16 323 ε Aquarii 3·8 22 30 298 β Aquarii 3·1 23 1 308 α Aquarii 3·2 23 9 325		3.5		
ε Aquarii 3.8 22 30 298 β Aquarii 3.1 23 1 308 α Aquarii 3.2 23 9 325				
β Aquarii 3·1 23 1 308 α Aquarii 3·2 23 9 325		3.4		
α Aquarii 3.2 23 9 325			_	208
		- 1	_	
	1 vdagu	+ "	23 31	321
	γ			
	3	ļ		
				-
	1			

Star. Mag. L.S.T. Az. δ Ceti 4.0 I 4I 28 ε Eridani 3.8 I 45 60 δ Eridani 3.7 I 54 61 β Orionis 0.3 3 32 56 β Eridani 2.9 3 37 47 κ Orionis 2.9 4 I 50 η Orionis 2.9 4 I 50 η Orionis 2.9 4 I 50 η Orionis 2.9 4 I 50 η Orionis 2.0 4 28 36 ε Orionis 2.0 4 28 36 ε Orionis 2.5 4 3I 30 30 Monocerotis 4.0 7 4 42 4 α Hydræ 2.2 7 45 56 δ Crateris 3.8 9 18 71 η Virginis 3.0 II 36 32 <th></th> <th>•</th> <th></th> <th></th> <th></th>		•			
δ Ceti 4.0 I 4I 28 ε Eridani 3.8 I 45 60 δ Eridani 3.7 I 54 61 β Orionis 2.9 3 37 47 κ Orionis 2.9 4 1 50 η Orionis 2.9 4 I 50 η Orionis 2.9 4 I 50 η Orionis 2.0 4 28 36 ε Orionis 2.0 4 28 36 ε Orionis 2.0 4 28 36 ε Orionis 2.0 4 28 36 ε Orionis 2.0 4 28 36 ε Orionis 2.0 4 28 36 ε Orionis 2.0 4 28 36 ε Orionis 2.0 4 29 33 δ Orionis 2.2 7 45 56 δ Crateris 3.8 9 18 71 <th>Star.</th> <th>Mag.</th> <th>L.S.T.</th> <th>Az.</th> <th></th>	Star.	Mag.	L.S.T.	Az.	
1 Ceti 3.8 22 32 59	δ Ceti E Eridani δ Eridani β Orionis γ Orionis δ Orionis γ Orionis δ Orionis δ Orionis δ Orionis δ Orionis δ Orionis γ Virginis γ Virginis γ Virginis γ Virginis β Libræ μ Serpentis ζ Ophiuchi ε Ophiuchi ν Ophiuchi ν Ophiuchi γ Ophiuchi γ Aquarii β Aquarii β Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii	4.0 3.8 3.7 2.9 2.9 3.4 2.7 2.5 4.0 2.7 3.4 2.7 3.6 3.4 3.7 3.6 3.7 3.6 3.7 3.6 3.7 3.6 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7	h. m. 1 41 1 45 1 54 3 32 3 37 4 0 4 1 4 8 4 28 4 29 4 31 7 45 9 18 11 20 11 33 11 36 12 35 13 31 14 29 14 46 14 51 14 52 16 10 17 36 18 58 19 57 21 2 21 9	28 60 61 56 47 60 50 38 36 33 30 42 56 71 29 58 41 62 45 60 47 60 40 47 60 40 47 60 40 47 60 40 40 40 40 40 40 40 40 40 40 40 40 40	
θ Ceti 3.8 23 40 57	λ Aquilæ ε Aquarii θ Aquilæ β Aquarii α Aquarii γ Aquarii λ Aquarii ι Ceti	3·6 3·8 3·4 3·1 3·2 4·0 3·8 3·8	17 36 18 58 19 5 19 57 21 2 21 9 21 10	47 60 33 49 31 35	

	_			
Star.		Mag.	L. S.T.	Az.
	-		h. m.	0
φ Eridani		3.8	0 45	152
]	3.0	0 45	125
		3.8	2 4	129
β Columbæ		3.2	3 32	115
ν Argus		3.2	4 30	131
α Argus		-0.9	4 59	154
π Argus		2.7	4 59	118
τ Argus		2.8	5 10	148
σ Argus		3.3	5 22	131
ζ Argus		2.3	5 50	124
γ Argus		2.2	6 14	140
λ Argus		2.2	7 o	131
ψ Argus		3.6	7 17	124
μ Argus		2.8	8 57	144
δ Centauri		2.9	10 25	147
γ Centauri		2.4	10 49	143
		2.9	II I	117
		3.3	11 38	128
θ Centauri		2.3	11 46	116
ζ Centauri		3.1	11 56	139
ε Centauri		2.6	12 15	155
η Centauri		2.7	I2 22	128
a Lupi]	2.9	12 42	139
x Centauri		3.4	12 46	128
β Lupi		2.8	12 47	130
113G Lupi		3.0	13 21	126
ζ Lupi		3.2	13 37	152
υ Scorpii	•••	2.8	15 10	118
λ Scorpii	•••	1.7	15 13	118
θ Scorpii	•••	2.0	15 25	130
ж Scorpii	•••	2.2	15 25	122
ι¹Scorpii	•••	3.1	15 31	124
α Aræ	•••	3.0	I5 43	146
η Sagittarii	•••	3.5	15 57	118
α Telescopii	•••	3.8	16 24	137
	•••	3.7	16 41	104
α .	••••	3.2	18 40	141
γ Gruis	••••	3.2	19 35	120
α Gruis	•••	2.2	20 11	140
β Gruis ε Gruis	••••	2.2	20 45	140
	•••	3.7	21 14	151
α Phœnicis β Phœnicis	•••	2.4	22 16	130
	•••	3.4	23 9	140
γ Phœnicis	•••	3.4	23 21	132
	_			
				•
		·	•	

Star.	Mag.	L.S.T.	Az.
		h. m.	0
γ Gruis	3.2	0 3	240
ε Gruis	3.7	0 14	209
β Gruis	2.2	0 31	220
a Piscis Australis	1.3	1 9	256
α Phœnicis	2.4	2 28	230
β Phœnicis	3.4	2 55	220
γ Phœnicis	3.4	3 29	228
φ Eridani		3 43	208
θ Eridani	3.0	5 5	235
α Horologii	3.8	6 18	231
α Argus		7 45	206
β Columbæ	3.2	8 4	245
τ Argus	2.8	8 26	212
v Argus	3.2	8 40	229
π Argus	2.7	9 29	242
σ Argus	3.3	9 32	229
γ Argus	0.0	10 0	220
ζ Argus	2.3	IO I2	236
λ Argus	2.2	11 10	229
ψ Argus	3.6	11 39	236
	2.8	12 29	216
μ Argus δ Centauri	***	13 43	213
γ Centauri	1	14 25	217
ε Centauri	1	14 55	205
c Centauri	1	15 31	243
ζ Centauri		15 44	22 I
μ Centauri	ماما	15 52	232
θ Centauri	0.0	16 18	244
α Lupi	2.9	16 30	22I
ζ Lupi	3.5	16 35	208
η Centauri	2.7	16 38	232
β Lupi	2.8	16 59	230
ж Centauri	3.4	17 2	232
113G Lupi	3.0	17 39	234
α Ατæ		19 7	214
θ Scorpii	1	19 37	230
υ Scorpii	2.8	19 40	242
λ Scorpii	1.7	19 43	242
x Scorpii	2.5	19 49	238
L ¹ Scorpii	3.1	19 53	236
α Telescopii	3.8	20 18	223
	3.2	20 27	242
η Sagittarii ζ Sagittarii	3.7	21 13	256
α Indi	3.2	22 24	219
α Gruis	2.2	23 55	220
		-	

	_		
Star.	Mag.	L. S.T.	Az.
		h. m.	0
λ Aquarii	3.8	0 26	305
ι Ceti	3.8	r 58	301
θ Ceti	3.8	3 0	303
δ Ceti	4.0	3 29	332
ζ Ceti	3.9	3 35	298
ε Eridani	3.8	5 13	300
δ Eridani δ Orionis	3.7	5 24 6 25	299
β Eridani	2·5 2·9	6 25 6 31	330
	3.4	6 32	322
η Orionis ε Orionis	1.7	6 35	327
ζ Orionis	2.0	6 46	324
β Orionis	0.3	6 50	304
c Orionis	2.9	7 1	310
х Orionis	2.2	7 28	300
30 Monocerotis	4.0	9 40	318
α Hydræ	2.2	11 3	304
η Virginis	4.0	13 12	331
γ Virginis ζ Virginis	3.0	13 40	328
ζ Virginis	3.4	14 27	331
α Virginis	1.2	15 9	298
β Libræ μ Serpentis	2·7 3·6	16 55 I	302 319
' Λ-Ī:L:	3.0	17 I 17 28	318
ε Ophiuchi	3.3	17 37	315
ζ Ophiuchi	2.7	18 20	298
η Serpentis	3.4	19 31	320
v Ophiuchi	3.5	19 40	300
λ Aquilæ	3.6	20 28	313
θ Aquilæ	3.4	21 9	327
ε Aquarii	3.8	22 28	300
β Aquarii	3.1	22 57	311
α Aquarii	3.2	23 2	329
γ Aquarii	4.0	23 25	325
4-0			
	i		
-			
			1

Star.	Mng.	L. S. T.	Az.
ζ Ceti	3.98 4.0 3.0 2.2 3.4 2.5 4.0 2.5 4.0 2.5 4.0 2.5 4.0 2.5 4.0 2.5 4.0 2.5 4.0 2.5 4.0 2.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 3.5 4.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0	h. m. 0 2 1 48 1 50 1 57 3 35 3 42 4 33 4 5 4 14 4 35 4 36 4 39 7 48 9 20 11 29 11 36 11 44 12 44 13 34 14 35 14 49 14 56 14 58 16 13 17 9 17 41 18 23 19 12 20 1 21 10 21 13 21 16 22 35 23 43	60 57 23 58 53 44 57 47 34 29 25 39 539 24 60 28 24 60 58 29 47 53 31 56 54 56 58 59 47 53 31 56 54

Star.	Mag.	L. S.T.	Az.
φ Eridani θ Eridani α Horologii ν Argus π Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Argus τ Δ Argus τ Δ Argus τ Δ Centauri τ Centauri τ Centauri τ Centauri τ Centauri τ Centauri τ Centauri τ Centauri τ Centauri τ Δ Lupi τ Δ Lupi τ Δ Lupi τ Σ Centauri τ Σ Σ Centauri τ Σ Centauri τ Σ Centauri τ Σ Centauri τ Σ Centauri τ Σ Centauri τ Σ Centauri τ Σ Centauri τ Σ Σ Σ Σ Σ Σ Σ Σ Σ Σ Σ Σ Σ Σ Σ Σ Σ	3.8 3.0 3.8 3.0 2.7 2.8 3.3 2.2 2.6 2.8 2.9 2.4 2.9 2.4 2.9 2.9 2.9 2.9 2.9 2.9 2.9 2.9	h. m. 0 37 0 42 2 1 4 26 4 49 4 57 5 38 5 47 6 56 7 14 8 51 10 18 10 43 10 59 11 34 11 51 12 5 12 19 12 37 12 43 13 17 13 29 15 22 15 22 15 37	149 124 128 129 151 116 146 129 122 138 129 141 137 153 126 137 128 126 127 116 129 117 116 129 117 116
θ Scorpii κ Scorpii ι¹ Scorpii	2·0 2·5 3·1	15 22 15 22 15 28	129 120 123

LATITUDE 28° SOUTH.

SW. QUADRANT

Star.	Mag.	L.S.T.	Az.
α Gruis γ Gruis ε Gruis β Gruis α Piscis Australis	2·2 3·2 3·7 2·2 1·3	h. m. o I o 6 o 22 o 36 I 10	222 242 211 222 258
α Phænicis β Phænicis γ Phænicis φ Eridani θ Eridani α Horologii	2·4 3·4 3·4 3·8 3·0 3·8	2 32 3 0 3 33 3 51 5 8 6 21	232 222 230 211 236 232
α Argus τ Argus ν Argus π Argus σ Argus γ Argus	-0·9 2·8 3·2 2·7 3·3 2·2	7 55 8 33 8 44 9 31 9 36 10 6	209 214 231 244 231 222
λ Argus ψ Argus μ Argus δ Centauri γ Centauri	2·3 2·2 3·6 2·8 2·9 2·4	10 15 11 14 11 42 12 35 13 50 14 31	238 231 237 218 215 219
ε Centauri ι Centauri ζ Centauri μ Centauri θ Centauri α Lupi	2·6 2·9 3·1 3·3 2·3 2·9	15 5 15 33 15 49 15 56 16 20 16 35	207 245 223 233 246 223
η Centauri ζ Lupi β Lupi κ Centauri 113G Lupi α Aræ		16 41 16 43 17 3 17 5 17 43 19 13	234 211 232 234 236 216
θ Scorpii ν Scorpii λ Scorpii κ Scorpii ι¹Scorpii α Telescopii	1·7 2·5 3·1 3·8	19 40 19 42 19 45 19 52 19 56 20 23	231 243 244 240 237 225
η Sagittarii ζ <i>Sagittarii</i> α Indi	3·2 3·7 3·2	20 29 21 14 22 29	244 258 221
			,

NE. QUADRANT

Star.	Mng.	L.S.T.	Az.
ζ Ceti δ Eridani γ Eridani β Orionis β Eridani κ Orionis ν Orionis η Orionis η Orionis η Orionis	3.9 3.8 3.7 3.2 0.3 2.9 2.2 2.9	h. m. 0 5 1 51 2 0 2 2 3 38 3 47 4 6 4 9 4 21	57 55 56 66 51 41 55 44 30
ζ Orionis ε Orionis 30 Monocerotis α Hydræ δ Crateris α Virginis γ Virginis β Libræ μ Serpentis	2.0 1.7 4.0 2.2 3.8 1.2 3.0 2.7 3.6	4 43 4 45 7 15 7 51 9 22 11 39 11 53 13 37 14 41	28 24 35 51 67 57 23 53
ζ Ophiuchi ε Ophiuchi δ Ophiuchi ν Ophiuchi η Serpentis λ Aquilæ α² Capricorni ε Aquarii θ Aquilæ β Aquarii	2·7 3·3 3·0 3·5 3·4 3·8 3·8 3·4	14 52 15 1 15 4 16 16 17 15 17 46 18 25 19 4 19 21 20 6	57 38 35 55 32 40 63 55 24 44
λ Aquarii α Aquarii γ Aquarii ι Ceti θ Ceti	3·8 3·2 4·0 3·8 3·8	21 17 21 20 21 24 22 38 23 46	50 22 27 54 52

SE. QUADRANT

LATITUDE 29° SOUTH.

SW. QUADRANT

L. S.T. Star. Mag. Az. h. m. 6 α Gruis 2.2 224 γ Gruis 3.2 244 ε Gruis 0 30 214 3.7 B Gruis 2.2 0 41 224 1.3 1 11 259 a Piscis Australis α Phœnicis 2.4 2 35 233 Phœnicis 3 224 3.4 5 γ Phœnicis 3.4 3 36 231 Eridani ... φ Eridani ... θ Eridani ... 3.8 3 59 213 5 11 5 53 238 3.0 203 3.5 a Doradus... 6 24 α Horologii 3.8 234 α Argus 8 2 I I -0.9 3 8 39 τ Argus 2.8 216 8 v Argus 3.2 47 233 π Argus 245 2.7 9 33 σ Argus 3.3 9 39 233 10 10 206 δ Argus 2.0 IO II 224 Argus 2.2 γ Argus ζ Argus 10 18 240 2.3 2.6 10 45 205 x Argus λ Argus 2.2 II 17 233 3.6 ψ Argus 11 45 239 2.8 12 40 μ Argus 220 2.9 13 57 δ Centauri 217 γ Centauri 14 36 22 I 2.4 ε Centauri 2.6 15 13 210 ζ Centauri 3.1 15 54 225 μ Centauri 3.3 15 59 235 16 40 225 α Lupi 2.9 16 44 236 Centauri 2.7 16 51 213 Lupi 3.2 17 6 233 β Lupi 2.8 236 к Centauri 3.4 17 8 17 46 113G Lupi ... 3.0 237 218 3.0 19 19 α Aræ 19 44 υ Scorpii ... 2.8 245 θ Scorpii ... 2.0 19 44 233 λ Scorpii ... 1.7 19 47 245 19 55 x Scorpii ... 2.5 24I 239 19 59 . 1 Scorpii ... 3.1 20 28 3.8 227 α Telescopii 3.2 20 31 246 Sagittarii η Sagittarii ζ Sagittarii 2593.7 21 15 22 34 α Indi 223 3.2

Star.	Mag.	L.S.T.	Az.
λ Aquarii ι Ceti θ Ceti ε Eridani γ Eridani γ Orionis η Orionis β Orionis ι Orionis ν Orionis ν Orionis κ Orionis γ Orionis γ Orionis γ Orionis γ Virginis γ Virginis β Libræ μ Serpentis δ Ophiuchi ε Ophiuchi γ Ophiuchi γ Ophiuchi γ Aquarii α Aquarii α Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii γ Aquarii	3.88 3.88 3.87 3.98 3.98 3.98 3.90 3.92 3.92 3.92 3.92 3.93 3.93 3.93 3.93	h. m. 0 19 1 52 2 54 3 29 5 18 6 19 6 6 21 6 6 31 6 6 53 7 22 9 10 57 13 23 15 49 17 18 14 19 19 34 20 53 22 22 22 44 22 48 23 10	310 306 308 303 305 304 294 336 337 307 325 309 337 307 327 303 307 327 328 307 307 307 307 307 307 307 307
*			

L. S.T. Star. Mag. Az. h. m. ζ Ceti 0 8 3.9 55 ε Eridani ... 3.8 I 54 52 δ Eridani ... 2 3.7 3 53 Y Eridani ... 2 63 3.5 4 65 48 38 53 Eridani... 4.0 2 42 β Orionis ... 0.3 3 42 β Eridani ... 52 2.9 3 и Orionis ... 2.2 52 9 4 ι Orionis ... 2.9 4 15 40 η Orionis ... ζ Orionis ... 4 29 4 52 26 3.4 2.0 23 30 Monocerotis ... 7 22 31 4.0 α Hydræ ... 2.2 7 55 48 δ Crateris ... 3.8 65 9 24 α Virginis... I · 2 II 42 55 β Libræ 2.7 13 41 51 μ Serpentis ζ Ophiuchi 14 48 29 3.6 2.7 14 55 54 ε Ophiuchi 15 3.3 7 35 δ Ophiuchi 15 11 31 3.0 16 19 v Ophiuchi 53 3.2 n Serpentis 3'4 17 23 28 λ Aquilæ ... 3.6 17 52 18 23 37 β Capricorni 3.3 66 α² Capricorni 18 27 3.8 61 ε Aquarii ... 3.8 19 53 β Aquarii ... 20 II 3.1 40 λ Aquarii ... 3.8 2I 2I 47 22 γ Aquarii ... 21 34 4.0 . Ceti 3.8 22 42 51 θ Ceti 3.8 23 50 49

Star.	Mag.	L. S.T.	Az.
		h. m.	0
φ Eridani	3.8	0 22	145
θ Eridani	3.0	0 36	120
α Horologii	3.8	1 55	124
α Doradus	3.5	3 I	154
ν Argus	3.2	· 4 19	125
α Argus	-0.9	4 34	146
τ Argus	2.8	4 51	141
σ Argus	3.3	5 11	125
ζ Argus	2.3	5 41	119
γ Argus	2.2	5 59 6 49	134
λ Argus	2.2	, ,	125
δ Argus	2.0	7 5 7 8	151
ψ Argus	3.6		119
x Argus	2.6	7 45	152
μ Argus	2.8	8 40	138
δ Centauri γ Centauri	2.9	10 5	141
, ,	2.4	10 33 11 28	137
μ Centauri ζ Centauri	3.3		123
ε Centauri	3.1		133
•	1	'/	147
η Centauri α Lupi	2.7	- 3	123
β Lupi	2.9	, ,	133
x Centauri	1	3,	125
113G Lupi	3.4	12 37	123 121
ζ Lupi	3.5	13 14	ī44
θ Scorpii	2.0	15 15	125
х Scorpii	2.5	15 17	117
ι¹Scorpii	3.1	15 22	119
α Aræ	3.0	15 25	140
ζ Aræ	3.1	15 26	156
β Aræ	2.8	15 47	154
α Telescopii	3-8	16 10	131
ζ Sagittarii	3.7	16 38	99
α Indi	3.2	18 25	135
γ Gruis	3.2	19 28	115
α Gruis	2.2	19 55	134
β Gruis	2.2	20 30	134
ε Gruis	3.7	20 51	144
α Phœnicis	2.4	22 6	125
β Phœnicis	3.4	22 54	134
γ Phœnicis	3.4	23 10	127
i.			
	1	=	
	<u> </u>		

LATITUDE 30° SOUTH.

NW. QUADRANT

Star.	Mag.	L. S.T.	Az.
		b. m.	0
γ Gruis	3.2	0 10	245
α Gruis	2.2	0 11	226
ε Gruis	3.7	0 37	216
β Gruis	2.2	0 46	226
α Piscis Australis	1.3	1 12	261
α Phœnicis	2.4	2 38	235
β Phœnicis	3.4	3 10	226
γ Phœnicis	3.4	3 40	233
φ Eridani	3.8	4 6	215
θ Eridani	3.0	5 I4 6 3	240
α Doradus	3.5		206
α Horologii α Argus	3.8	6 27 8 10	236 214
A	-0·9 2·8	8 45	214
τ Argus ν Argus	3.5	8 51	235
σ Argus	3.3	9 43	235
γ Argus	2.2	10 15	226
8 Argus	2.0	10 19	209
ζ Argus	2.3	10 21	24Î
х Argus	2.6	10 55	208
λ Argus	2.2	II 2I	235
ψ Argus	3.6	11 48	24 I
μ Argus	2.8	12 46	222
δ Centauri	2.9	14 3	219
γ Centauri	2.4	14 41	223
μ Centauri	3.3	15 2	237
ε Centauri	2.6	15 21	213
ζ Centauri	3.1	15 59 16 45	227
α Lupi η Centauri	2·9 2·7	16 45 16 47	237
η Centauri ζ Lupi	3.2	16 58	216
β Lupi	2.8	17 9	235
к Centauri	3.4	17 11	237
113G Lupi	3.0	17 49	239
ζ Aræ	3.1	18 18	204
β Aræ	2.8	18 49	206
α Aræ	3.0	19 25	220
θ Scorpii	2.0	19 47	235
ж Scorpii	2.5	19 57	243
ι¹Scorpii	3.1	20 2	241
α Telescopii	3·8 3·7	20 32 21 16	229 261
ζ Sagittarii α Indi	3.2	22 39	225
α 111α1 ··· ···	ا " د	~~ 37	ر ا
		į	
, to			
	١		

Star.	Mag.	L.S.T.	Az.
λ Aquarii ι Ceti θ Ceti Σ Eridani δ Eridani γ Eridani β Eridani β Orionis ι Orionis κ Οrionis κ Οrionis κ Οrionis κ Οριόμιο κ Ορρίμιο .	3.8 3.8 3.8 3.8 3.8 3.8 3.9 4.0 2.2 4.0 2.2 4.0 2.2 4.0 2.2 4.0 2.2 4.0 3.2 3.3 3.3 3.3 3.3 3.3 3.3 3.3	h. m. 0 15 148 2 506 3 5 5 141 6 6 226 6 6 47 7 9 0 53 13 15 6 42 17 21 18 11 19 31 20 12 22 19 22 23 23	313 309 311 305 308 307 297 334 322 337 295 312 308 329 312 295 305 331 309 329 325 306 332 307 323 299 325 307 329 329 329 329 329 329 329 329 329 329
	A.		

Star.	Mag.	L.S.T.	Az.
		h. m.	0
ζ Ceti	3.9	0 11.	53
ε Eridani	3.8	1 58	50
δ Eridani	3.7	2 7	51
γ Eridani	3.2	2 7	61
53 Eridani	4.0	2 44	63
β Orionis	0.3	3 47	45
β Eridani	2.9	3 59	34
и Orionis	2.2	4 13	50
ι Orionis	2.9	4 2 I 5 52	37
ρ Argus	2.9		85 26
30 Monocerotis	4.0	7 31 8 o	
α Hydræ $Hydræ$	3.3	8 52	45 66
δ Crateris	3.8	9 26	62
δ Corvi	3.1	10 32	67
α Virginis	I.5	11 45	53
α Libræ	2.9	12 53	66
β Libræ	2.7	13 45	48
μ Serpentis	3.6	14 57	24
ζ Ophiuchi	2.7	14 59	52
η Ophiuchi	2.6	15 13	66
ε Ophiuchi	3.3	15 14	31
δ Ophiuchi	3.0	15 20	26
ν Ophiuchi	3.5	16 23	50
η Serpentis	3.4	17 33	23
λ Aquilæ	3.6	17 59 18 25	33
β Capricorni α ² Capricorni	3·8		64 58
ε Aquarii	3.8	18 30 19 11	50
β Aquarii	3·1	20 17	37
λ Aquarii	3.8	21 25	44
ι Ceti	3.8	22 46	49
θ Ceti	3.8	23 54	46
		" ,	'
*			
	,		
19			
			1

1	1	1	
Star.	Mag.	L.S.T.	Az.
	i	h. m.	0
φ Eridani	3.8	0 16	143
θ Eridani	3.0	0 34	119
α Horologii	3.8	I 52	122
α Doradus	3.2	2 52	151
ν Argus	3.2	4 16	124
α Argus	-0.9	4 27	144
τ Argus	2.8	4 45	139
σ Argus	3.3	5 8	124
ζ Argus	2.3	5 39	117
γ Argus	2.2		132
λ Argus	2.2	5 55 6 46	124
δ Argus	2.0	6 57	149
ψ Argus	3.6	7 6	117
х Argus	2.6	7 36	150
ท Velorum	3.0	8 o	155
μ Argus	2.8	8 35	136
δ Centauri	2.9	10 0	139
γ Centauri	2.4	10 28	135
γ Crucis	1.6	10 57	155
μ Centauri	3.3	11 25	122
ζ Centauri	3.1	II 37	132
ε Centauri	2.6	11.42	145
η Centauri	2.7	12 10	121
α Lupi β Lupi	2.9	12 23	132
Contouri	2.8	12 34 12 34	123
У Т:	3.4	J 2 1	121
C T!	3·5		142 119
θ Scorpii	2.0	13 9 15 12	123
ж Scorpii	2.5	15 15	115
ζ Aræ	3·I	15 16	153
α Aræ	3.0	15 20	138
ι¹ Scorpii	3.1	15 20	118
β Aræ	2.8	15 38	152
α Telescopii	3⋅8	16 6	130
α Indi	3.2	18 21	133
α Pavonis	2.1	<i>18 53</i>	156
α Gruis	2.2	19 51	132
β Gruis	2.2	20 26	132
ε Gruis	3.7	20 45	142
α Phœnicis	2.4	22 3	123
β Phœnicis γ Phœnicis	3.4	22 50	132
γ Phœnicis	3.4	23 7	125
			ŀ

Star. Mag. L.S.T. Az	.
h. m. °	-1
α Gruis 2·2 0 15 228	8 I
ε Gruis 3·7 0 43 218	
β Gruis 2·2 0 50 225	
α Phœnicis 2·4 2 41 23;	7 I
β Phœnicis 3.4 3 14 222	
γ Phœnicis 3.4 3 43 23	5
φ Eridani 3.8 4 12 21	
0 Eridani 3.0 5 16 24	1
α Doradus 3.5 6 12 200	9
α Horologii 3.8 6 30 238	8
α Argus0.9 8 17 210	6
τ Argus 2.8 8 51 22	
ν Argus 3·2 8 54 230	
σ Argus 3·3 9 46 230	
γ Argus 2·2 10 19 22	8
ζ Argus 2·3 10 23 24;	3
δ Argus 2.0 10 27 21	
N Velorum 3.0 10 58 20	- 1
ж Argus 2.6 11 4 210	
λ Argus 2.2 11 24 230	
ψ Argus 3.6 11 50 24:	
μ Argus 2.8 12 51 222	
γ Crucis 1.6 13 57 200 δ Centauri 2.9 14 8 221	
δ Centauri 2.9 14 8 221	- 1
γ Centauri 2.4 14 46 22	
E Centauri 2.6 15 28 21	
ζ Centauri 3·1 16 3 228	
μ Centauri 3·3 16 5 238	
α Lupi 2.9 16 49 228	
η Centauri 2.7 16 50 239	
Ç Lupi 3.5 17 4 218	
β Lupi 2.8 17 12 237	
x Centauri 3.4 17 14 239	
9	
β Aræ 2·8 18 58 208 α Aræ 3·0 19 30 222	
θ Scorpii 2·0 19 50 237 κ Scorpii 2·5 19 59 245	
ι Scorpii 3·1 20 4 243	
α Telescopii 3.8 20 36 230	
α Pavonis 2.1 21 45 204	
α Indi 3.2 22 43 227	
	-
ii	╝

Star.	Mag.	L. S.T.	Az.
	<u> </u>	h. m.	0
ζ Ceti	. 3.9	0 15	50
ε Eridani	. 3.8	2. 2	47
γ Eridani	. 3.2	2 10	59
δ Eridani	3.7	2 11	48
53 Eridani	4.0	2 47	61
μ Leporis		3 16	65
β Orionis	0.3	3 52	42
β Eridani × Orionis	2.9	4 7	30
κ Orionis ι Orionis	2.9	4 17 4 28	47 33
α Canis Majoris		4 48	66
ρ Argus	2.9	5 52	83
30 Monocerotis	4.0	7 41	21
α Hydræ	. 2.2	8 5	42
ν Hydræ	. 3.3	8 55	64
δ Crateris:	. 3.8	9 29	60
δ Corvi	. 3·I	10 34	64
α Virginis	. I·2	11 49.	50
α Libræ β Libræ	. 2.9	12 55	64
β Libræ ζ Ophiuchi	2.7	13 49	-45
η Ophiuchi	2.7	15 3	49 63
ε Ophiuchi		15 23	26
δ Ophiuchi	9.0	15 30	20
v Ophiuchi		16 28	47
λ Aquilæ		18 7	29
β Capricorni	3.3	18 27	62
α ² Capricorni	3.8	18 33	56
ε Aquarii	. 3.8	19 16	47
δ Capricorni		19 49	66
β Aquarii δ Aquarii	3.1	20 24	33
λ Aquarii	3.5	20 57 21 30	65 41
ι Ceti	3.8	22 50	46
θ Ceti	1 - 0	23 59	43
			'
**			
			ľ
	1		
	i		
	1		
	i	1	
	1	1	
	13.2	-	
7	1	[

r 	1	!	
Star.	Mag.	L. S.T.	Az.
	T	h. m.	0
α Eridani	0.6	0 4	156
φ Eridani	3.8	0 10	141
י ניפרא ו	3.0	0 32	117
TT 1 : :	3.8	1 49	121
D 1	3.5	2 43	149
ν Argus	3.2	4 13	122
	-0·9	4 21	142
τ Argus	2.8	4 39	138
σ Argus	3.3	5 5	122
0	2.3	5 37	115
	2.2	5 51	130
O	2.2	6 43	122
	2.0	6 49	147
	3.6	7 4 7 28	116
ж Argus			147
ท Velorum	. 3.0	7 50	153
μ Argus	2.8	8 31	134
8 Centauri	2.9	9 55	137
	. 2.4	10 24	133
γ Crucis	1.6	10 47	152
μ Centauri	1 0 0	II 22	. I20
ζ Centauri	1 -	11 33	130
ε Centauri η Centauri	1 1	11 36	143
Т	1 1	12 7 12 19	119
0 T!	1 5 1		130 121
. Contanni		12 31 12 31	119
χ Centauri ζ Lupi	1 1	13 2	140
113G Lupi			118
ζ Aræ	. 3·I	13 7 15 8	150
θ Scorpii	2.0	15 9	122
х Scorpii	100	15 13	114
α Aræ	3.0	15 15	136
ι¹ Scorpii	. 3.1	15 18	116
β Aræ	. 2.8	15 30	149
α Telescopii	1 -	16 3	128
α Indi	3.2	18 17	131
α Pavonis	. 2.1	18 42	153
α Gruis	. 2.2	19 47	131
β Gruis	. 2.2	20 22	131
ε Gruis	3.7	20 39	140
α Phœnicis	2.4	22 0	121
β Phœnicis	3.4	22 46	130
γ Phœnicis	· 3·4	23 4	124
			- 1
,			- 1
			l

		-		
Star.		Mag.	L.S.T.	Az.
		i	h. m.	-
α Gruis	•••	2.2	0 19	229
ε Gruis	•••	3.7	0 49	220
β Gruis	•••	2.2	0 54	229
α Phœnicis	•••	2.4	2 44	239
α Eridani	•••	0.6	3 6	204
β Phœnicis	• • •	3.4	3 18	230
γ Phœnicis	• • •	3.4	3 46	236
φ Eridani	•••	3.8	4 18	219
θ Eridani	•••	3.0	5 18	243
α Doradus	•••	3.2	6 21	211
α Horologii	• • •	3.8	6 33	239
α Argus	•••	-0.9	8 23	218
v Argus	•••	3.5	8 57	238
τ Argus	•••	2.8	8 57	222
σ Argus	•••	3.3	9 49	238
γ Argus	•••	2.2	10 23	230
ζ Argus δ Argus	•••	2.3	10 25	245
δ Argus N Velorum	•••	2.0	10 35	213
и Velorum и Argus	•••	3·0 2·6	II I2	213
λ Argus	•••	2.2	11 27	238
ψ Argus	•••	3.6	11 52	244
μ Argus	•••	2.8	12 55	226
γ Crucis	•••	1.6	14 7	208
δ Centauri	•••	2.9	14 13	223
γ Centauri		2.4	14 50	227
ε Centauri		2.6	15 34	217
ζ Centauri	•••	3·1		230
μ Centauri		3.3	16 7 16 8	240
η Centauri		2.7	16 53	241
α Lupi	•••	2.9	16 53	230
ζ Lupi		3.5	17 10	220
β Lupi	• • •	2.8	17 15	239
x Centauri	•••	3.4	17 17	241
113G Lupi	•••	3.0	17 53	242
ζAræ	• • •	3.1	18 36	210
β Aræ	•••	2.8	19 6	211
α Aræ	• • •	3.0	19 35	224
θ Scorpii	•••	2.0	19 53	238
x Scorpii	•••	2.5	20 1	246
L'Scorpii	•••	3.1	20 6	244
α Telescopii α Pavonis	•••	3·8 2·I	20 39 21 56	232 207
α Pavonis α Indi	•••	3.5	22 47	229
a mai	•••) ²	22 4/	9
	ļ		ļ	
1-2	-		I	

NE. COADITANT				
Star.	Mag.	L.S.T.	Az.	
θ Ceti ζ Ceti ε Eridani γ Eridani β Eridani μ Leporis β Orionis ι Orionis α Canis Majoris ρ Argus α Hydræ γ Corvi δ Corvi α Virginis α Libræ ζ Ophiuchi η Ophiuchi γ Ophiuchi γ Ophiuchi γ Capricorni α Capricorni α Aquarii δ Aquarii δ Aquarii λ Aquarii	3·8 9·8 3·9 2·9·6 9·2 2·3·8 8·1 2·9·7·7·6 3·3·8 3·9 3·9·8 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9	h. m. 0 5 0 19 2 7 2 13 2 15 2 50 3 19 3 58 4 16 4 22 4 36 4 50 5 53 8 11 8 57 9 32 10 36 11 53 12 58 13 54 16 33 18 16 18 30 18 36 19 52 20 32 21 36 22 55	40 47 44 56 45 58 63 39 25 44 29 64 81 39 65 65 64 46 61 21 44 24 53 44 53 63 63 74 46 63 74 46 63 74 74 74 74 74 74 74 74 74 74 74 74 74	

Star.	Mag.	L.S.T.	Az.
		h. m.	0
φ Eridani	3.8	0 5	139
θ Eridani	3.0	0 29	115
α Horologii	3.8	1 46	119
α Doradus	3.2	2 36	146
ν Argus	3:2	4 10	120
α Argus	-0.9	4 15	140
τ Argus	2.8	4 35	136
σ Argus γ Argus	3.3	5 2 5 47	120 128
λ Argus	2.2	5 47 6 40	120
δ Argus	2.0	6 42	144
ψ Argus	3.6	7 2	114
и Argus	2.6	7 21	145
и Velorum	3.0	7 4 I	150
μ Argus ζ Centauri	2.8	8 26	132
ζ Centauri	2.9	9 50	135
γ Centauri · δ Crucis	2.4	10 19	131
	3.1	10 35	155
γ Crucis	1.6	10 38	150
μ Centauri	3.3	II 20	118
δ Centauri ε Centauri	3.1	11 29	128
ε Centauri η Centauri	2.6	11 30	141 118
α Lupi	2·7 2·9	12 4 12 15	118
β Lupi	2.8	12 28	120
ж Centauri	3.4	12 28	118
ζ Lupi	3.2	12 57	138
113G Lupi	3.0	13 4	116
ζ Aræ	3.1	14 59	148
θ Scorpii	2.0	15 6	120
α Aræ	3.0	15 10	134
ι¹ Scorpii	3.1	15 16	114
β Aræ	2.8	15 23	147
α Telescopii α Indi	3.8	15 59	126
α Indi α Pavonis	3·2	18 13 18 33	129
a Carria	2.1	""	151
β Gruis	2.2	19 43 20 18	129
ε Gruis	3.7	20 34	138
α Phœnicis	2.4	21 57	120
β Phœnicis	3.4	22 42	129
γ Phœnicis	3.4	23 1	122
α Eridani	0.6	23 54	153
,			

			 (
Star.	Mag.	L. S.T.	Az.
		h. m.	•
α Gruis	. 2.2	0 23	231
ε Gruis	. 3.7	0 54	222
β Gruis	. 2.2	0 58	231
α Phœnicis	1 .	2 47	240
α Eridani	. 0.6	3 16	207
β Phœnicis	,	3 22	231
γ Phœnicis		3 49	238
φ Eridani	1 -	4 23	221
θ Eridani		5 21	245
α Doradus		6 28	214
α Horologii	1 -	6 36	241
α Argus		8 29	220
ν Argus		9 0	240
τ Argus		9 1	224
σ Argus	. 3.3	9 52	240
γ Argus	. 2.2	10 27	232
δ Argus		10 42	216
ท Velorum	1 - 4	11 17	210
× Argus		11 19	215
λ Argus		11 30 11 54	240 246
ψ Argus	- 0		228
μ Argus δ Crucis	-	13 0	
~ .	6	13 47	205
γ Crucis δ Centauri		14 16	225
	1 1		229
l ' ~ . ·	_ ¿	14 55 15 40	219
O t		16 10	242
ν α	1 2 2	16 11	232
γ Centauri	1	16 56	242
α Lupi	1	16 57	232
ζ Lupi		17 15	222
β Lupi	2.8	17 18	240
x Centauri	3.4	17 20	242
113G Lupi	. 3.0	17 56	244
ζ Aræ	. 3·1	18 45	212
β Aræ	- 0	19 13	213
α Aræ	3.0	19 40	226
θ Scorpii	. 2.0	19 56	240
ι¹ Scorpii	. 3.1	20 8	246
α Telescopii	. 3.8	20 43	234
α Pavonis	. 2·I	22 5	209
α Indi	. 3.2	22 51	231

Star.	Mag.	L. S.T.	Az.
λ Aquarii δ Aquarii ι Ceti θ Ceti ε Eridani δ Eridani β Eridani β Orionis ι Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Orionis κ Οριομία κ Οριομία κ Οριομία κ Οριομία κ Οριομία κ Οριομία κ Οριομία κ Οριομία κ Οριομία κ Οριομία κ Οριομία κ Οριομία .	3.8 3.8 3.8 3.3 3.3 3.3 3.3 3.3 3.3 3.3	h. m. 0 40 1 35 2 35 3 15 4 51 5 35 5 56 6 24 6 6 59 6 6 7 8 34 10 35 12 35 14 49 16 34 16 34 16 34 17 59 18 57 19 48 21 52 22 22 23 34	323 297 318 320 313 316 315 304 335 302 321 296 321 298 302 295 298 313 318 299 339 314 299 339 316 336 337 316 336 337 316 317 317 318 318 318 318 318 318 318 318 318 318

LATITUDE 34º SOUTH.

NE. QUADRANT

Star.	Mag.	L. S.T.	Az.	
θ Ceti ζ Ceti ε Eridani γ Eridani δ Eridani μ Leporis α Leporis α Leporis α Canis Majoris α Canis Majoris α Canis Majoris α Canis Majoris α Canis Majoris α Canis Majoris α Canis Majoris α Canis Majoris α Canis Majoris α Hydræ α Hydræ α Virginis α Virginis α Corvi α Virginis α Cophiuchi η Ophiuchi η Ophiuchi α Capricorni α Aquarii δ Capricorni β Aquarii δ Aquarii λ Aquarii λ Aquarii λ Aquarii β Ceti ι Ceti	3·8 3·8 3·8 3·7 4·0 3·7 3·7 4·0 3·2 1·0 2·2 2·3 3·8 3·1 2·2 2·7 2·5 3·3 3·8 3·9 3·9 3·9 3·9 3·9 3·9 3·9 3·9	h. 0 24 2 13 2 2 53 3 3 4 4 25 8 9 35 10 39 11 5 38 13 14 4 53 14 4 53 15 10 39 11 15 38 18 40 19 54 20 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	36 44 0 54 2 56 1 5 5 5 5 5 6 6 6 5 5 5 5 5 6 6 6 5 5 5 5 6 6 6 5 5 5 5 6 6 6 6 5 5 5 6 6 6 6 5 6	

Star.	i	Mag.	L. S.T.	Az.
φ Eridani θ Eridani α Horologii α Doradus ν Argus α Argus τ Argus γ Argus λ Argus λ Argus ν Argus λ Argus ν Argus ν Argus ν Argus ν Argus ν Centauri γ Centauri γ Centauri τ Centauri τ Centauri τ Centauri τ Centauri τ Centauri τ Centauri τ Centauri α Lupi κ Crucis β Crucis μ Centauri α Lupi κ Centauri α Lupi κ Crucis σ Crucis β Crucis α Centauri τ Centau		3.8 0 8 3.5 2 9 8 3.2 0 2.7 6 3.0 8 9 4 1 6 5 3.6 1 7 9 8 4 5 0 0 0 0 8 8 2 2 2 2 7 4 4 3.6 6 3.0 8 9 4 1 1 3.2 2 2 3.3 3.3 3.2 2 2 2 3.4 4 3.6 6 3.0 8 9 4 1 1 3.0 6 8 8 2 2 2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3.2 3	h. m. 0 27 1 43 2 29 4 10 4 31 5 43 6 6 42 7 7 33 3 8 22 12 12 12 26 12 2 52 2 14 15 5 6 15 15 15 15 15 15 15 15 15 15 15 15 15	137 113 117 144 119 138 134 119 155 143 154 148 131 133 130 152 147 1155 117 139 126 116 127 118 116 127 118 116 117 118 116 117 118 119 127 147 148 149 155 117 117 118 119 127 147 147 147 147 147 147 147 147 147 14

L.S.T. Star. Mag. Az. h. m. α Gruis 2.2 0 26 233 ε Gruis 3.7 0 59 224 β Gruis 233 2.2 α Phœnicis 242 2.4 2 49 α Eridani ... 0.6 3 25 210 β Phœnicis 3 26 233 3.4 γ Phœnicis 3 52 240 3.4 φ Erilani... 4 28 5 23 3.8 223 θ Eridani ... 3.0 247 6 35 α Doradus 216 3.2 6 39 α Horologii 3.8 243 8 34 α Argus 222 0.0 v Argus 24I 9 3.2 2 τ Argus 2.8 5 226 9 24 I σ Argus 3.3 9 54 ε Argus 1.7 10 205 0 10 31 233 Argus 2.2 10 48 Argus 2.0 217 206 ι Argus 2.3 10 57 2.6 11 25 217 x Argus N Velorum 3.0 II 25 212 λ Argus ... 2.2 II 32 24.I 2.8 13 4 229 μ Argus ... 208 13 57 Crucis ... 3·I 227 Centauri 2.9 14 22 β Crucis ... 14 22 205 1.5 γ Crucis ... 1.6 14 23 213 2.4 γ Centauri 14 59 230 15 46 22 I ε Centauri 2.6 μ Centauri 16 13 243 3.3 16 14 ζ Centauri 234 3.1 η Centauri 2.7 16 58 244 α Lupi 17 0 233 2.9 β Lupi ζ Lupi 17 20 242 2.8 17 20 223 3.2 17 22 ж Centauri 244 3·4 3·0 17 58 246 113G Lupi ... 18 52 214 ζ Aræ 3.I βAræ 2.8 19 20 215 228 19 44 α Aræ 3.0 θ Scorpii ... 19 58 242 2.0 20 46 235 α Telescopii 3.8 α Pavonis... 2 · I 22 13 2 I I 22 55 232 α Indi 3.2

Star.	Mag.	L. S.T.	Az.
		h. m.	٥
8 Aquarii	3.2	0 38	299
ι Ceti	3⋅8	1 29	321
θ Ceti	3.8	2 29	324
β Ceti	2.2	2 34	294
ζ Ceti	3.9	3 10.	316
ε Eridani	3.8	4 45	320
δ Eridani γ Eridani	3.7	4 58	318 306
	3·2 4·0	5 32 6 15	304
53 Eridani c Orionis	2.9	6 17	336
β Orionis	0.3	6 18	325
μ Leporis	3.3	6 57	299
κ Orionis	2.2	7 0	320
α Leporis	2.7	7 23	295
β Canis Majoris	2.0	8 13	295
α Canis Majoris	-1.6	8 31	299
α Hydræ	2.2	10 31	325
ν Hydræ δ Crateris	3.3	12 32	301
	3·8 2·8	12 55	305
γ Corvi δ Corvi	3·I	14 3 14 13	297 300
α Virginis	I·2	14 44	316
β Libræ	2.7	16 26	322
α Libræ	2.9	16 32	301
ζ Ophiuchi	2.7	17 54	317
η Ophiuchi	2.6	18 51	301
v Ophiuchi	3.2	19 12	319
α ² Capricorni	3.8	21 48	309
β Capricorni ε Aquarii	3·8	21 59 22 0	303
ε Aquarii β Aquarii	3·1	22 12	319 337
δ Capricorni	3.0	23 32	299
λ Aquarii	3.8	23 53	327
		3 33	
- £			

Star. L. S.T. Az. Mag. 0 h. m. θ Ceti 3.8 0 18 32 ζ Ceti 0 30 3.9 40 ε Eridani ... 3.8 2 19 37 Eridani ... 2 20 51 3.2 38 Eridani ... 3.7 2 26 4.0 53 Eridani ... 2 56 53 μ Leporis ... 58 3 24 3.3 62 α Leporis ... 3 38 2.7 4 11 β Orionis ... 0.3 31 β Canis Majoris 4 28 62 2.0 х Orionis ... 2.2 4 34 37 4 56 5 55 α Canis Majoris -1·6 59 77 ρ Argus 2.9 8 25 α Hydræ ... 31 2.2 ν Hydræ ... 3.3 9 57 3 53 60 δ Crateris... 3.8 9 38 γ Corvi 2.8 10 24 Corvi 57 3.1 10 42 α Virginis... 1.2 I 2 4 40 56 67 α Libræ 2.9 13 3 4 β¹ Scorpii ... 2.9 14 β Libræ ... ζ Ophiuchi 7 18 2.7 14 34 39 56 2.7 15 η Ophiuchi 2.6 15 24 v Ophiuchi 16 44 37 3.2 18 36 β Capricorni 3.3 54 18 45 α² Capricorni 3.8 48 3.8 ε Aquarii ... 19 32 37 δ Capricorni 19 57 3.0 59 58 δ Aquarii ... 2 I 3.2 λ Aquarii ... 3.8 29 21 51 64 β Ceti 22 46 2.2 ι Ceti 3.8 23 35

			
Star.	Mag.	L. S.T.	Az.
	<u> </u>	h. m.	0
α Gruis	2.2	Q 30	234
ε Gruis	3.7	I 4	225
β Gruis	2.2	1 5	234
α Phœnicis	2.4	2 52	244
β Phœnicis	3.4	3 29	235
α Eridani	0.6	3 33	212
γ Phœnicis	3.4	3 55	241
φ Eridani	3.8	4 33 5 25	225
θ Eridani	3.0		248
α Horologii	3.8	6 41	244
α Doradus	3.5	6 41	218
α Argus	-0.9	8 39	223
v Argus	3.5	9 5	243 228
τ Argus	3.3	, ,	243
σ Argus ε Argus	1.7	9 57 10 10	208
	2.2	10 34	235
γ Argus δ Argus	2.0	10 54	219
LArgus	2.3	11 6	209
к Argus	2.6	11 31	219
N Velorum	3.0	11 32	214
λ Argus	2.2	11 35	243
μ Argus	2.8	13 8	231
δ Crucis	3.1	14 6	210
δ Centauri	2.9	14 27	228
γ Crucis β Crucis	1.6	14 30	214
	1.2	14 32	208
γ Centauri	2.4	15 3	232
β Centauri	0.9	15 41	206
ε Centauri	2·6 0·3	15 51 16 12	223 204
α Centauri μ Centauri		16 12	245
1 20 0	3.1	16 17	235
l	2.7	17 0	246
η Centauri α Lupi	2.9	17 3	235
β Lupi	2.8	17 23	243
z Centauri	3.4	17 24	245
ζ Lupi	3.5	17 25	225
ζ Ατω	3.1	18 58	216
β Aræ	2.8	19 26	217
α Aræ	3.0	19 49	229
θ Scorpii	2.0	20 I	243
α Telescopii	3.8	20 49	237
α Pavonis	2·I	22 21	214
α Indi	3.5	22 59	234
2			1
			ļ
l			

		1	 I
Star.	Mag.	L.S.T.	Az.
<u></u>		h. m.	0
δ Aquarii	3.2	0 35	302
ι Ceti	3.8	I 23	325
θ Ceti	3.8	2 22	328
β Ceti ζ Ceti	2.2	2 32	296
ε Eridani	3·8	3 4 4 39	320 323
8 Eridani	3.7	4 52	322
γ Eridani	3.2	5 28	309
β Orionis	0.3	6 11	329
53 Eridani	4.0	6 12	307
μ Leporis	3.3	6 54	302
× Orionis	2.2	6 54	323
α Leporis β Canis Majoris	2.7	7 20 8 10	298 298
α Canis Majoris	-1.6	8 28	301
α Hydræ	2.2	10 23	329
ν Hydræ	3.3	12 29	303
δ Crateris	3.8	12 52	307
γ Corvi	2.8	14 0	300
δ Corvi	3.1	14 10 14 38	303 320
α Virginis β Libræ	2.7	14 38 16 19	326
α Libræ	2.9	16 29	304
ζ Ophiuchi	2.7	17 48	321
β¹ Scorpii	2.9	17 58	293
η Ophiuchi	2.6	18 48	304
v Ophiuchi	3.2	19 6	323
α ² Capricorni	3.8	21 43	312
ε Aquarii β Capricorni	3·3	21 54 21 56	323 306
δ Capricorni	3.0	23 29	301
λ Aquarii	3.8	23 45	331
•		,	-
		İ	
		- 6	
		1	
		1	
		-	

L.S.T. Star. Mag. Az. 0 h. m. θ Ceti 3.8 0 26 27 ζ Ceti 0 36 3.9 37 Eridani ... 48 2 24 3.2 ε Eridani ... 2 26 3.8 33 Eridani ... 3.7 2 33 34 53 Eridani ... 3 50 4.0 0 μ Leporis ... 56 3.3 3 27 α Leporis ... 60 2.7 3 4I β Orionis ... 0.3 4 20 26 β Canis Majoris 60 2.0 4 3I x Orionis ... 2.2 4 4I 33 α Canis Majoris ·1·6 56 75 4 59 5 56 ρ Argus ... 2.9 8 34 26 α Hydræ ... 2.2 ν Hydræ ... 3.3 9 6 54 δ Crateris... 3.8 9 42 50 Corvi 58 2.8 IO 27 δ Corvi ... 3.1 10 45 55 α Virginis... I . 2 I2 IO 37 α Libræ 2.9 7 6 13 54 β¹ Scorpii ... 2.9 14 64 β Libræ ... 2.7 14 15 30 ζ Ophiuchi 2.7 15 24 36 η Ophiuchi 15 27 2.6 54 v Ophiuchi 3.2 16 51 33 β Capricorni 18 40 52 3.3 α² Capricorni 3.8 18 50 45 E Aquarii ... 3.8 19 39 33 δ Capricorni 3.0 20 0 56 56 24 δ Aquarii... 3·5 3·8 8 2 I λ Aquarii ... 22 1 β Ceti 61

22 49

23 15

31

2.2

3.8

ι Ceti

		1	<u> </u>
Star.	Mag.	L.S.T.	Az.
		h. m.	0
θ Eridani	3.0	0 23	110
α Horologii	3⋅8	1 39	114
α Doradus	3.5	2 17	140
α Argus	-0.9	4 0	135
v Argus	3.2	4 3	115
τ Argus	2.8	4 22	131
o Argus	3.3	4 55 5 9	115
a Pictoris	3.3		157
γ Argus	2.2	5 36	124
ε 'Argus	1.7	6 24	150
δ Argus	2.0	6 25 6 33	139
λ Argus × Argus	2.6	33	115
ι Argus	2.3	7 3 7 16	139
N Velorum	3.0	7 19	149 144
μ Argus	2.8	8 14	127
q Carinæ	3.4	8 29	154
δ Centauri	2.9	9 37	130
δ Crucis	3.1	10 8	148
γ Centauri	2.4	10 8	126
γ Crucis	1 ∙6	10 17	144
β Crucis	1.2	10 45	150
ε Centauri	2.6	11 14	136
ζ Centauri	3.1	11 19	123
α Lupi	2.9	12 5	123
β Centauri	0.9	12 6	152
β Lupi ζ Lupi	2.8	12 21	115
ζ Lupi α Centauri	3.5	12 42	133
ζ Aræ	3·1	12 45 14 39	153
α Aræ	3.0	14 39 14 57	142
θ Scorpii	2.0	14 59	115
β Aræ	2.8	15 4	141
α Telescopii	3.8	15 50	IZI
α Indi	3.2	18 2	125
α Pavonis	2.1	18 10	144
α Gruis	2.2	19 33	124
β Gruis	2.2	20 7	124
ε Gruis	3.7	20 20	133
α Tucanm	2.9	20 26	154
α Phœnicis β Phœnicis	2.4	21 49	115
γ Phœnicis	3·4 3·4	22 3I 22 53	124
α Eridani	0.6	23 30	146
φ Eridani	3.8	23 50	133
•			
		0.725	
		•	

Star.	Mag.	L. S.T.	Az.
	<u> </u>	h. m.	•
α Tucanæ	2.9	0 0	206
α Gruis	2.2	0 33	236
ε Gruis	3.7	1 8	227
β Gruis	2.2	19	236
α Phœnicis	2.4	2 55	245
β Phœnicis	3.4	3 33	236
α Eridani	0.6	3 40	214
γ Phœnicis	3.4	3 57	243
φ Eridani	3.8	4 38	227
θ Eridani	3.0	5 27	250
α Horologii	3.8	6 43	246
α Doradus	3.2	6 47	220
a Pictoris	3.3	8 25	203
α Argus	-0.9	8 44	225
ν Argus	3.5	9 7	245
τ Argus	2.8	9 14	229
σ Argus	3.3	9 59	245
ε Argus	1.7	10 18	210
γ Argus	2.2	10 38	236
δ Argus	2.0	10 59	221
LArgus	2.3	11 14	211
λ Argus	2.2	11 37	245
κ Argus	2.6	11 37	245 22I
37-1	3.0	11 39	216
q Carinæ	3.4	11 59	206
μ Argus	2.8	13 12	233
δ Crucis	3.1	14 14	212
6 U	2.9	14 31	230
	1.6	14 37	216
β Crucis β Crucis	1.5	14 41	210
	2.4	15 6	234
γ Centauri β Centauri	0.9	15 50	208
ε Centauri	2.6	15 56	224
ζ Centauri	3.1	16 21	237
α Centauri	0.3	16 23	207
α Lupi	2.9	17 7	237
A Lupi	2.8	17 25	245
ζ Lupi	3.2	17 30	227
ζ Aræ	3.1	19 5	218
β Aræ	2.8	19 32	219
α Aræ	3.0	19 53	231
θ Scorpii	2.0	20 3	245
α Telcscopii	3.8	20 52	239
α Pavonis	2·I	22 28	216
α Indi	3.5	23 2	235
	,		

Star.		Mag.	L. S.T.	Az.
			<u> </u>	1 0
α Hydri		3.0	h. m.	
α Hydri θ Eridani	•••	3.0	0 9	155 109
α Horologii	• • • •	3.8	1 37	113
α Doradus		3.2	2 11	138
β Doradus		3.8	3 50	156
α Argus	•••	-0.9	3 55	133
v Argus		3.2	4 0	114
τ Argus	•••	2.8	4 17	129
σ Argus	•••	3.3	4 52	114
α Pictoris	•••	3.3	4 59	I 54
γ Argus	••••	2.2	5 33	122
ε Argus δ Argus	•••	1·7 2·0	6 16	148
δ Argus λ Argus	•••	2.2	6 19 6 30	137 114
и Argus		2.6	6 57	137
i Argus		2.3	7 8	147
и Velorum		3.0	7 13	I42
μ Argus		2.8	8 11	126
q Carinæ		3.4	8 19	152
δ Centauri		2.9	9 33	128
δ Crucis	•••	3.1	10 1	146
γ Centauri	•••	2.4	10 .4	125
γ Crucis	••••	1.6	10 11	142
β Crucis	•••	1.5	10 37	148
ε Centauri ζ Centauri	•••	2.6	11 16	134
β Centauri		0.0	11 57	122 150
α Lupi		2.9	12 2	122
α Centauri		0.3	12 36	151
ζ Lupi		3.2	12 37	132
ζ Aræ		3.1	14 33	140
α Aræ		3.0	14 53	127
θ Scorpii		2.0	14 56	114
β Aræ	•••	2.8	14 58	139
α Telescopii	•••	3.8	15 47	120
α Indi α Pavonis	•••	3.2	17 59 18 4	123
α Pavonis α Gruis	•••	2·I	- 1	143 123
β Gruis		2.2	19 30 20 4	123
ε Gruis		3.7	20 15	131
α Tucanæ		2.9	20 16	151
α Phænicis		2.4	21 47	113
β Phœnicis	• • •	3.4	22 28	122
γ Phœnicis	• • • •	3.4	22 50	115
α Eridani	•••	0.6	23 23	144
φ Eridani	•••	3.8	23 46	132
	ł			
				

·				
Star.		Mag.	L.S.T.	Λz.
	i		h. m.	0
α Tucanæ		2.9	0 10	209
α Gruis		2.2	0 36	237
β Gruis		2.2	I I2	238
ε Gruis		3.7	1 13	229
α Phænicis		2.4	2 57	247
β Phœnicis	•••	3.4	3 36	238
α Hydri	•••	3.0	3 43	205
α Eridani	···	0.6	3 47	216
γ Phœnicis		3.4	4 0	245
φ Eridani θ <i>Eridani</i>	• • •	3.8	4 42	228 251
	•••	<i>3∙0</i> 3∙8	5 29 6 45	247
α Horologii α Doradus	•••			222
		3·8 3·8	6 53 7 16	204
l '		3.3	8 35	206
		-0·9	8 49	227
v Argus		3.2	9 10	246
A -		2.8		231
, -		3.3	9 19 10 2	246
		1.7	10 26	212
γ Argus		2.2	10 41	238
δ Argus		2.0	11 5	223
LArgus		2.3	II 22	213
λ Argus		2.2	11 40	246
x Argus		2.6	11 43	223
и Velorum		3.0	11 45	218
q Carinæ		3.4	12 9	208
μ Argus	ا…	2.8	13 15	234
δ Crucis	···	3.1	14 21	214
δ Centauri	•••	2.9	14 35	232
γ Crucis β Crucis	•••	1.6	I4 43	218
		1.5	14 49 15 10	235
1 2 ~ .	···	2·4 0·9	15 10 15 59	210
ε Centauri		2.6	16 1	226
		3.1	16 24	238
α Centauri		0.3	16 32	209
α Lupi		2.9	17 10	238
ζ Lupi]	3.5	17 35	228
ζ Aræ		3.1	19 11	220
β Aræ		2.8	19 38	221
α Aræ		3.0	19 57	233
θ Scorpii		$2\cdot0$	20 6	246
α Telescopii .		3.8	20 55	240
α Pavonis	•••	2·I	22 34	217
α Indi	•••	3.2	23 5	237
•				
<u> </u>		1	<u> </u>	I

Star.	Mag.	L. S.T.	Az.
8 Aquarii	3.5 3.8 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9	h. m. 0 29 1 6 2 3 2 26 2 51 4 24 4 37 5 19 6 39 6 48 7 14 7 21 8 4 8 22 10 3 10 11 12 22 12 43 13 54 14 25 16 2 17 34 17 53 18 41 18 51 20 6 20 51 21 3 21 33 21 33 21 38 22 348 23 23	307 334 338 301 327 332 330 215 313 332 307 302 294 306 340 286 308 313 305 308 327 335 309 329 298 309 3294 294 294 294 319 306

<u> </u>			
Star.	Mag.	L. S.T.	Az.
ζ Ceti γ Eridani	3·9 3·2	h. m. O 52 2 34	28 42
ε Eridani δ Eridani 53 Eridani	3·8 3·7 4·0	2 45 2 51 3 10	22 24 44
β Leporis μ Leporis α Leporis	3·0 3·3 2·7	3 31 3 34 3 47	63 50 55
β Canis Majoris κ Orionis α Canis Majoris	2·0 2·2 -1·6	4 37 5 0	55 22 51
ρ Argus ν Hydræ δ Crateris	2·9 3·3 3·8	5 6 5 58 9 14 9 52	72 49 44
γ Corvi δ Corvi α Virginis	2·8 3·1 1·2	10 34 10 53 12 26	53 49 28
α Libræ β¹Scorpii η Ophiuchi	2·9 2·6	13 14 14 12 15 35	48 60 48
ζ Ophiuchi μ Sagittarii ξ Sagittarii	2·7 4·0 3·6	15 41 16 14 16 58	26 64 64
π Sagittarii ν Ophiuchi β Capricorni α ² Capricorni	3·5 3·3	17 10 17 10 18 49	64 23 46
ε Aquarii δ Capricorni c² Aquarii	3·8 3·8 3·8	19 1 19 58 20 7 21 8	37 23 51 65
δ Aquarii β Ceti	3·5 2·2 3·8	21 15 22 55 23 36	50 57 20
	5.0	20 00	20
ţ			
			*
** ₀ 1			

Star.	Mag.	L. S.T.	Az.
		h. m.	
θ Eridani	3.0	0 20	107
α Horologii	3.8	1 34	111
α Doradus	3.2	26	137
α Reticuli	3.4	2 22	155
β Doradus	3⋅8	3 40	154
α Argus	-0.9	3 50	132
τ Argus	2.8	4 13	127
α Pictoris	3.3	4 49	152
γ Argus	2.2	5 30 6 8	120
ε Argus	1.7	_	146
δ Argus	2.0	6 14	135
и Argus	2.6	6 52	136
LArgus	2.3	7 I	145
N Velorum	3.0	7 7	140
μ Argus	2.8	8 7	124
q Carinæ δ Centauri	3.4	8 10	150
δ Centauri λ Centauri	2.9	9 29	127
	3.3	9 40	154
	3·1 2·4	9 53 10 0	143
γ Centauri γ Crucis	1.6		123
α Crucis	1.1	10 4 10 30	140 154
β Crucis	1.5	10 30	146
ε Centauri	2.6	11 4	132
ζ Centauri	3·1	11 13	120
β Centauri	0.9	11 49	148
α Lupi	2.9	11 59	120
α Centauri	0.3	12 28	149
ζ Lupi	3.5	12 33	130
β Triang. Aust.	3.0	14 1	156
ζ Aræ	3.1	14 27	138
α Aræ	3.0	14 49	126
β Aræ	2.8	14 52	137
α Telescopii	3.8	I5 44	118
α Indi	3.2	17 55	121
α Pavonis α Gruis	2·I	17 58	141
	2.2	19 26	IZI
β Gruis α Tucanæ	2.2	20 I 20 8	121 150
ε Gruis	2·9 3·7	20 8 20 II	130
a Phanicis	2.4	21 45	112
β Phœnicis	3.4	22 25	IZI
α Eridani	0.6	23 16	142
φ Eridani	3.8	23 41	130
α Hydri	3.0	23 59	153
-			
		·	

Star.	Mag.	L. S.T.	Az.
	<u> </u>	h. m.	0
α Tucanæ	2.9	0 18	210
α Gruis	2.2	0 40	239
β Gruis	2.2	1 15	239
ε Gruis	3.7	I 17	230
a Phænicis	2.4	2 59	248
β Phœnicis	3.4	3 39	239
α Hydri	3.0	3 53	207
α Eridani	0.6	3 54	218
φ Eridani	3.8	4 47	230
θ Eridani	3-0	5 30	253
α Reticuli	3.4	6 4	205
α Horologii	3.8	6 48	249
α Doradus	3.2	6 58	223
β Doradus	3.8	7 26	206
α Pictoris	3.3	8 45	208 228
α Argus	-0·9 2·8	8 54	
τ Argus		9 23	233
ε Argus	I • 7	10 34	214 240
γ Argus δ Argus	2.0	10 44 11 10	225
δ Argus ι Argus	2.3	11 29	215
κ Argus	2.6	11 48	224
N Velorum	3.0	11 51	220
q Carinæ	3.4	12 18	210
μ Argus	2.8	13 19	236
λ Centauri	3.3	13 24	206
α Crucis	1.1	14 14	206
δ Crucis	3-1	14 29	217
δ Centauri	2.9	14 39	233
γ Crucis	1.6	14 50	220
γ Crucis β Crucis	1.2	14 56	214
γ Centauri	2.4	15 14	237
ε Centauri	2.6	16 6	228
β Centauri	0.9	16 7	212
ζ Centauri	3.1	16 27 16 40	240 211
α Centauri	0.3	16 40 17 13	240
α Lupi β Triang. Aust.	2·9 3·0	17 35	204
β Triang. Aust. ζ Lupi	3.2	17 39	230
ζ Ατæ	3.1	19 17	222
β Ατæ	2.8	19 44	223
α Aræ	3.0	20 I	234
α Telescopii	3.8	20 58	242
α Pavonis	2 · I	22 40	219
α Indi	3.2	23 9	239

Star. Mag. L. S.T. Az. δ Aquarii 3.5 0.25 310 ι Ceti 3.8 0.54 340 c² Aquarii 3.8 1.2 295 β Ceti 2.2 2.2 2.3 303 ζ Ceti 3.9 2.42 332 ε Eridani 3.8 4.13 338 δ Eridani 3.7 4.27 336 γ Eridani 3.2 5.14 318 53 Eridani 4.0 5.58 316 κ Orionis 2.2 6.28 338 μ Leporis 2.2 6.28 338 μ Leporis 2.7 7.11 305 β Canis Majoris 2.0 8.1 305 α Canis Majoris -1.6 8.18 309 ρ Argus 2.9 10.10 288 γ Hydræ 3.3 12.18 311 δ Crateris 3.8 12.38 316 γ Corvi 2.8 13.50 307
δ Aquarii 3.5 0 25 310 ι Ceti 3.8 0 54 340 c² Aquarii 3.8 1 2 295 β Ceti 2.2 2 23 303 ζ Ceti 3.9 2 42 332 ε Eridani 3.8 4 13 338 δ Eridani 3.7 4 27 336 γ Eridani 3.2 5 14 318 53 Eridani 4.0 5 58 316 x Orionis 2.2 6 28 338 μ Leporis 2.2 6 28 338 μ Leporis 2.7 7 11 305 β Canis Majoris 2.0 8 1 305 α Canis Majoris 2.0 8 18 309 ρ Argus 2.9 10 10 288 γ Hydræ 3.3 12 18 311 δ Crateris 3.8 12 38 316 γ Corvi
ι Ceti 3.8 0 54 340 c² Aquarii 3.8 1 2 295 β Ceti 2.2 2 23 303 ζ Ceti 3.9 2 42 332 ε Eridani 3.8 4 13 338 δ Eridani 3.7 4 27 336 γ Eridani 3.2 5 14 318 53 Eridani 4.0 5 58 316 κ Orionis 2.2 6 28 338 μ Leporis 2.2 6 28 338 μ Leporis 2.7 7 11 305 β Canis Majoris 2.0 8 1 305 α Canis Majoris -1.6 8 18 309 ρ Argus 2.9 10 10 288 ν Hydræ 3.3 12 18 311 δ Crateris 3.8 12 38 316 γ Corvi 2.8 13 50 307
π Sagittarii 3.0 21 0 296 α² Capricorni 3.8 21 27 323 ε Aquarii 3.8 21 28 337 β Capricorni 3.3 21 43 314 δ Capricorni 3.0 23 19 309

ζ Ceti 3.9 1 3 22 γ Eridani 3.2 2 41 38 ε Leporis 3.3 3 4 65 53 Eridani 4.0 3 15 41 β Leporis 3.0 3 34 61 μ Leporis 2.7 3 51 52 β Canis Majoris 2.0 4 41 52 α Canis Majoris -1.6 5 10 48 ρ Argus 2.9 6 0 70 ν Hydræ 3.3 9 19 46 δ Crateris 3.8 9 58 40 ε Corvi 3.8 9 58 40 γ Corvi 3.2 10 9 65 β Corvi 3.3 11 15 66 α Virginis 1.2 12 37 22 α Libræ	Star.	Mag.	L.S.T.	Az.
μ Sagittarii 4·0 16 16 62 ξ Sagittarii 3·6 17 0 62 π Sagittarii 3·0 17 12 62 β Capricorni 3·3 18 54 43 α² Capricorni 3·8 19 9 33 ζ Capricorni 3·9 19 23 66 δ Capricorni 3·0 20 12 48 c² Aquarii 3·8 21 10 63	ζ Ceti	3.9 3.2 3.3 4.0 3.3 2.7 2.0 -2.9 3.3 3.8 2.8 2.9 2.5 2.9 2.5 2.9 2.6	h. m. 1 3 2 41 3 4 3 15 3 34 3 39 3 51 4 41 5 10 6 0 9 19 9 58 10 30 10 38 10 58 11 15 12 37 13 19 13 58 14 15 15 40	22 38 65 41 61 47 52 48 70 46 67 50 66 67 50 66 67 58 45 58
δ Aquarii 3·5 21 20 47 β Ceti 2·2 22 58 54	ζ Ophiuchi μ Sagittarii ξ Sagittarii π Sagittarii β Capricorni α² Capricorni ζ Capricorni α Capricorni δ Capricorni δ Capricorni α² Aquarii δ Aquarii	2.7 4.0 3.6 3.0 3.8 3.9 3.0 3.8 3.9	15 40 15 53 16 16 17 0 17 12 18 54 19 9 19 23 20 12 21 10 21 20	45 20 62 62 62 43 33 66 48 63 47

Star.	Mag.	L.S.T.	Az.
		h. m.	0
θ Eridani	3.0	0 18	106
α Horologii	3.8	1 32	110
α Doradus	3.2	2 0	135
α Reticuli	3.4	2 11	152
β Doradus	3.8	3 30	152
α Argus	-0.9	3 46	130
τ Argus	2.8	4 10	126
α Pictoris	3.3	4 39	150
γ Argus	2.2	5 27	119
ε Argus	1.7	6 0	144
δ Argus	2.0	6 9	134
ж Argus	2.6	6 47	134
i Argus N Velorum	2.3	6 54	143
	3.0	7 I 8 I	138
q Carinæ μ Argus	3·4 2·8	_	148
θ Argus	3.0	8 4 8 49	123 156
δ Centauri	2.9	9 25	125
λ Centauri	3.3	9 29	152
δ Crucis	3.1	9 47	142
γ Centauri	2.4	9 57	122
γ Crucis	1.6	9 58	138
α Crucis	I · I	10 19	152
β Crucis	1.2	10 23	144
ε Centauri	2.6	10 59	131
ζ Centauri	3∙1	11 10	118
β Centauri	0.9	11 41	146
α Lupi	2.9	11 56	119
α Centauri	0.3	12 19	147
ζ Lupi	3.2	12 29	128
β Triang. Aust. ζ Aræ	3.0	13 50	154
β Aræ	3·1	14 21	137
` A	3.0	14 46 14 46	136
α Telescopii	3.8	14 46 15 41	117
α Pavonis	2·I	17 52	139
α Indi	3.2	17 52	120
α Gruis	2.2	19 23	119
β Gruis	2.2	19 58	119
α Tucanæ	2.9	19 59	147
ε Gruis	3.7	20 7	128
a Phanicis	2.4	21 43	110
β Phœnicis	3.4	22 22	119
α Eridani	0.6	23 9	140
φ Eridani	3.8	23 37	129
α Hydri	3.0	23 49	150
	1		

Star.	Mag.	L.S.T.	Az.
		h. m.	0
α Tucanæ	2.9	0 27	213
α Gruis	2.2	0 43	241
β Gruis	2.2	1 18	241
ε Gruis	3.7	I 2I	232
a Phanicis	2.4	3 1	250
β Phœnicis	3.4	3 42	241
α Eridani	0.6	4 I	220
α Hydri φ Eridani	3·8	4 3	231
θ Eridani	3.0	4 51 5 32	254
α Reticuli	3.4	6 15	208
α Doradus	3.2	7 4	225
β Doradus	3.8	7 36	208
α Pictoris	3.3	8 55	210
α Argus	-0.9	8 58	230
τ Argus	2.8	9 26	234
ε Argus	1.7	10 42	216
γ Argus	2.2	10 47	241
δ Argus	2.0	11 15	226
t Argus	2.3	11 36	217
ж Argus	2·6 3·0	11 53	220
и Velorum q Carinæ	3.4	II 57 I2 27	212
$\begin{array}{cccccccccccccccccccccccccccccccccccc$	3.0	12 31	204
μ Argus	2.8	13 22	237
λ Centauri	3.3	13 35	208
α Crucis	I.I	14 25	208
δ Crucis	3.1	14 35	218
δ Centauri	2.9	14 43	235
γ Crucis β Crucis	1.6	14 56	222
	1.2	15 3	216
γ Centauri	2.4	15 17 16 11	238
E Centauri	2.6	16 11	229 214
β Centauri ζ Centauri	3·1	16 30	242
α Centauri	0.3	16 49	213
α Lupi	2.9	17 16	241
ζ Lupi	3.2	17 43	232
β Triang. Aust.	3.0	17 46	206
β Triang. Aust. ζ Aræ	3.1	19 23	223
β A.ræ	2.8	19 50	224
α Aræ	3.0	20 4	236
α Telescopii	3.8	21 I 22 46	243 22I
α Pavonis α Indi	3·2	22 40	240
a mui	٠ د		-7-
			2

Star. Mag. L.S.T. Az. δ Aquarii 3.5 0 20 313 c² Aquarii 3.8 1 0 297 β Ceti 3.9 2 31 338 γ Eridani 3.2 5 7 322 53 Eridani 4.0 5 53 313 ε Leporis 3.3 6 39 313 ε Leporis 3.3 6 39 313 ε Leporis 2.7 7 7 308 β Leporis 3.0 7 16 299 β Canis Majoris -1.6 8 14 312 ρ Argus 2.9 10 8 290 γ Hydræ 3.3 12 13 314 δ Crateris 3.8 12 32 320 γ Corvi 2.8 13 46 310 δ Corvi 3.2 14 3 295 α Virginis 1.2 14 5 338 β Corvi 3.2 14 30 293 γ Hydræ 3.3 15 13 294				
δ Aquarii 3.5 0 20 313 c² Aquarii 3.8 1 0 297 β Ceti 2.2 2 20 306 ζ Ceti 3.9 2 31 338 γ Eridani 4.0 5 53 319 μ Leporis 3.3 6 39 313 ε Leporis 3.3 7 0 295 α Leporis 2.7 7 7 308 β Leporis 3.0 7 16 299 β Canis Majoris 2.0 7 57 308 α Canis Majoris -1.6 8 14 312 ρ Argus 2.9 10 8 290 ν Hydræ 3.3 12 13 314 δ Crateris 3.8 12 32 320 γ Corvi 2.8 13 46 310 δ Corvi 3.1 13 54 314 ε Corvi 3.2 14 3 295 α Virginis 1.2 14 5 338 β Corvi 2.8 14 30 293 γ Hydræ 2.9 16 13 315 ζ Ophiuchi 2.7 17 13 340 β Scorpii 2.9 17 47 302 δ Scorpii 2.9 17 47 302	Star.	Mag.	L.S.T.	Az.
	c² Aquarii β Ceti γ Eridani 13 Eridani μ Leporis μ Leporis β Leporis β Canis Majoris α Canis Majoris α Canis Majoris γ Canis Majoris ν Hydræ δ Crateris γ Corvi δ Corvi α Virginis β Corvi γ Libræ γ Apdræ α Libræ γ Ophiuchi β¹ Scorpii η Ophiuchi μ Sagittarii π Sagittarii π Sagittarii π Sagittarii π Sagittarii π Capricorni β Capricorni β Capricorni δ Capricorni	3.8 3.9 3.0 3.3 3.0 3.0 3.0 3.0 3.0 3.0	0 20 1 0 2 20 2 31 5 7 5 53 6 39 7 0 7 7 7 16 7 57 8 14 10 8 12 13 12 32 13 46 13 54 14 30 15 13 16 13 17 17 52 18 32 20 2 20 46 20 58 21 19 21 38 23 14	313 297 306 338 322 319 313 295 308 299 314 320 314 295 338 290 314 295 338 293 294 315 302 295 315 298 298 298 298 317 312

L. S.T. Star. Mag. Az. h. m. γ Eridani ... 3.2 2 48 ε Leporis ... 63 3.3 3 53 Eridani ... 3 22 37 4.0 58 β Leporis ... 3.0 3 37 μ Leporis ... 3 44 44 3.3 α Leporis ... 2.7 3 55 49 49 66 β Canis Majoris 2.0 4 5 45 0 o² Canis Majoris 3.1 5 6 15 2 α Canis Majoris -1·6 45 67 ρ Argus 2.9 ν Hydræ ... 42 3.3 9 24 3.8 δ Crateris... 10 36 5 62 ε Corvi 3.2 IO II 64 β Corvi 2.8 10 33 Y Corvi 10 42 2.8 47 δ Corvi 3.1 ΙI 43 γ Hydræ ... 3.3 11 18 64 α Libræ 2.9 13 25 42 δ Scorpii ... 63 2.5 14 β¹ Scorpii ... 14 18 55 2.9 η Ophiuchi 2.6 15 46 41 μ Sagittarii ξ Sagittarii 16 19 4.0 59 3.6 17 3 59 π Sagittarii 3.0 17 15 59 β Capricorni 3.3 19 0 39 α² Capricorni 3.8 19 17 29 ζ Capricorni 64 19 25 3.9 δ Capricorni 3.0 20 17 45 61 c² Aquarii ... 3.8 21 13 δ Aquarii ... 3.2 21 25 44 β Ceti 2.2 23

Star.	Mag.	L. S.T.	Az.
		h. m.	0
θ Eridani	3.0	0 16	104
α Horologii	3.8	1 30	108
α Doradus	3.2	1 55	134
α Reticuli	3.4	2 I	150
β Doradus	3.8	3 20	149
α Argus	-0.9	3 41	128
τ Argus	2.8	4 6	124
α Pictoris	3.3	4 31	148
γ Argus	2.5		117
ε Argus	1.7		142
δ Argus	2.0	5 53 6 4	
x Argus	2.6	6 4 6 42	132
L Argus	2.3		
и Velorum	3.0		141
q Carinæ	_	22	137 146
	3·4 2·8	7 53 8 o	121
μ Argus θ Argus	3.0	_	
2 0 4		· · · ·	153
8 Centauri	3.3	,	150
δ Crucis	2.9	,	124
	3·1	9 41	140
•		9 53	136
γ Centauri	2.4	9 54	120
α Crucis	I.I	10 10	150
β Crucis	1.5	10 16	142
ε Centauri ζ Centauri	2.6	10 55	129
	3.1	11 7	117
β Centauri	0.9	11 33	144
α Lupi	2.9	11 53	117
α Centauri	0.3	12 11	145
ζ Lupi	3.2	12 25	127
α Circini	3.4	12 38	155
β Triang. Aust.	3.0	13 39	151
ζ Aræ β Aræ	3.1	14 16	135
' A	2.8	14 41	134
α Aræ α Telescopii	3·8	14 42	123 115
	3.6	15 38	155
η Pavonis α Pavonis	2·I	15 40 17 46	137
α Indi			118
α Gruis	3.5	17 49 19 20	118
α Tucanæ	2.9	19 20	145
β Gruis	2.2	19 55	118
ε Gruis	3.7	20 3	127
α Phænicis	2.4	21 41	109
β Phœnicis	3.4	22 19	118
α Eridani	0.6	23 3	138
φ Eridani	3.8	23 33	127
α Hydri	3.0	23 40	148
		_2 T-	p
		<u>'</u>	

α Tucanæ 2.9 0 35 2 α Gruis 2.2 0 46 2 β Gruis 3.7 1 25 2 α Phoenicis 2.4 3 3 2 β Phænicis 3.4 3 45 2 α Eridani 0.6 4 7 2 α Hydri 3.0 4 12 2 φ Eridani 3.8 4 55 2 α Reticuli 3.0 5 34 2 α Doradus 3.5 7 9 2 α Doradus 3.5 7 9 2 α Doradus 3.5 7 9 2 α Doradus 3.8 7 46 2 α Argus 3.9 3 2 α Pictoris 3.3 9 3 2 α Argus 1.7 10 49 2 α Argus 1.7 10 49 2 α Argus 2.2 10 50 2 α Argus 2.2 10 50 2 α Argus 2.3 11 43 2 <t< th=""><th>Az.</th></t<>	Az.
α Gruis 2.2 0 46 2.2 β Gruis 3.7 1 25 2.2 ε Gruis 3.7 1 25 2.2 α Phoenicis 3.7 1 25 2.2 α Phoenicis 3.4 3 45 2.2 α Eridani 0.6 4 7 2.3 α Hydri 3.0 4 12 2.2 φ Eridani 3.8 4 55 2.2 α Doradus 3.3 4 6 25 2.3 α Reticuli 3.4 6 25 2.3 α Doradus 3.5 7 9 2.3 α Doradus 3.3 9 3 2.3 α Argus -0.9 9 3 2.3 α Pictoris 3.3 9 3 2.3 α Argus 1.7 10 49 2.3 α Argus 1.7 10 49 2.3 α Argus 2.2 10 50 2.2 δ Argus 2.2 10 50 2.2 δ Argus 2.2 10 50 2.2 α Argus 2.2 10 50 2.2 <	•
α Gruis 2·2 0 46 2.2 β Gruis 2·2 1 21 2.2 ε Gruis 3·7 1 25 2.2 α Phoenicis 3·7 1 25 2.2 α Phoenicis 3·4 3 45 2.2 α Eridani 0·6 4 7 2.3 α Hydri 3·0 4 12 2.2 φ Eridani 3·0 5 34 2.3 α Reticuli 3·4 6 25 2.2 α Doradus 3·5 7 9 2.3 α Doradus 3·8 7 46 2.5 α Doradus 3·8 7 46 2.2 α Doradus 3·8 7 46 2.2 α Argus 2·8 9 30 2.2 α Argus 2·8 9 30 2.2 α Argus 2·2 10 50 2.2 δ Argus 2·3 11 43 2.2 <td>215</td>	215
β Gruis 2·2 I 2I 2.6 Gruis 3·7 I 25 2.2 α Phoenicis 3·7 I 25 2.2 α Phoenicis 3·4 3 45 2.2 α Eridani 0·6 4 7 2.2 α Hydri 3·0 4 I2 2.2 φ Eridani 3·8 4 55 2.2 φ Eridani 3·0 5 3I 2.2 α Doradus 3·4 6 25 2.2 α Doradus 3·5 7 9 2.2 α Doradus 3·8 7 46 2.2 α Argus -0·9 9 3 2.2 α Pictoris 3·3 9 3 2.2 α Argus 2·8 9 30 2.2 α Argus 1·7 10 49 2.2 α Argus 2·0 11 20 2.2 α Argus	242
E Gruis 3.7 1 25 2 2 3 4 3 4 5 2 4 3 3 4 5 2 4 3 4 5 5 2 4 3 3 4 5 2 4 4 7 2 2 4 5 5 6 2 5	242
α Phoenicis 2.4 3 3 2.5 β Phœnicis 3.4 3 45 2.2 α Eridani 3.0 4 12 2.2 φ Eridani 3.8 4 55 2.2 θ Eridani 3.0 5 34 2.2 α Reticuli 3.4 6 25 2.2 α Doradus 3.5 7 9 2.2 α Doradus 3.8 7 46 2.5 α Doradus 3.8 7 46 2.2 α Pictoris 3.3 9 3 2.2 α Argus 2.8 9 30 2.2 α Argus 2.2 10 50 2.2 δ Argus 2.2 10 50 2.2 α Argus 2.2 11 2.2 2.2 α Argus 2.3 11 43	233
α Eridani 0.6 4 7 2 α Hydri 3.0 4 12 2 φ Eridani 3.0 5 34 2 α Reticuli 3.4 6 25 2 α Doradus 3.5 7 9 2 α Doradus 3.8 7 46 2 α Argus -0.9 9 3 2 α Pictoris 3.3 9 3 2 α Pictoris 2.8 9 30 2 α Argus 2.8 9 30 2 α Argus 2.0 11 20 2 δ Argus 2.0 11 20 2 δ Argus 2.0 11 20 2 α Argus 2.0 11 43 2 α Argus 2.0 11 43 2 α Argus 2.0 11 43 2	251
α Eridani 0.6 4 7 22 α Hydri 3.0 4 12 22 φ Eridani 3.0 5 3.4 6 25 22 α Reticuli 3.4 6 25 22 α Doradus 3.5 7 9 22 α Doradus 3.8 7 46 25 α Doradus 3.8 7 46 25 α Doradus 3.8 7 46 22 α Argus -0.9 9 3 22 α Pictoris 3.3 9 3 22 α Argus 2.8 9 30 22 α Argus 2.0 11 20 22 α Argus 2.0 11 20 22 α Argus 2.0 11 23 22 α Argus 2.8 13 26 2	242
φ Eridani 3.8 4 55 2 θ Eridani 3.0 5 34 2 α Reticuli 3.4 6 25 2 α Doradus 3.5 7 9 2 β Doradus 3.8 7 46 2 α Argus -0.9 9 3 2 α Pictoris 3.3 9 3 2 α Argus 2.8 9 30 2 α Argus 2.2 10 50 2 δ Argus 2.2 10 50 2 δ Argus 2.0 11 20 2 α Argus 2.0 11 20 2 α Argus 2.0 11 20 2 α Argus 2.0 11 20 2 α Argus 2.0 11 20 2 α Argus 2.0 11 23 2 α Argus 2.0 11 23 2 α Argus 3.0 12 43 2 α Argus 3.0 12 43 2 α Centauri 3.3 13 44 2 α Crucis 1.1	222
θ Eridani 3.0 5 34 2.5 α Reticuli 3.4 6 25 2.5 α Doradus 3.5 7 9 2.5 β Doradus 3.8 7 46 2.5 α Argus -0.9 9 3 2.5 α Pictoris 3.3 9 3 2.5 α Pictoris 2.8 9 30 2.5 α Argus 1.7 10 49 2.5 γ Argus 2.2 10 50 2.6 λ Argus 2.2 10 50 2.6 λ Argus 2.0 11 20 2.2 λ Argus 2.0 11 58 2.2 λ Argus 2.0 11 58 2.2 λ Centauri 3.0 12 3 2.2 λ Centauri 3.0 12 43 2.0 λ Centauri 3.3 13 44 2.1 λ Crucis 3.1 14 41 2.2 γ Crucis 3.1 14 41 2.2 γ Crucis 1.5 15 10 2.1 γ Centauri 2.6 16 15 2.2	212
α Reticuli 3·4 6 25 2 α Doradus 3·5 7 9 2 β Doradus 3·8 7 46 2 α Argus 2·9 9 3 2 α Pictoris 2·8 9 30 2 α Pictoris 2·8 9 30 2 α Argus 2·2 10 50 2 γ Argus 2·2 10 50 2 γ Argus 2·0 11 20 2 γ Argus 2·0 11 20 2 γ Argus 2·0 11 20 2 γ Argus 2·0 11 20 2 γ Argus 2·0 11 43 2 γ Argus 2·0 11 23 2 γ Argus 3·0 12 3 2 γ Carinæ 3·0 12 43 2 γ Carinæ 3·1 14 41 <	233
α Doradus 3.5 7 9 2.2 β Doradus 3.8 7 46 2.2 α Argus -0.9 9 3 2.2 α Pictoris 2.8 9 30 2.2 α Argus 1.7 10 49 2.2 γ Argus 2.0 11 20 2.2 δ Argus 2.0 11 20 2.2 λ Argus 2.0 11 20 2.2 λ Argus 2.0 11 2.3 2.2 λ Carinæ 3.0 12 3.2 2.2 λ Carinæ 3.0 12 3.2 2.2 λ Carinæ 3.0 12 43 2.2 λ Carinæ 3.3 13 44 2.1 α Crucis 1.1 14 3.4 2.1 α Crucis 1.5	256
β Doradus 3·8 7 46 2 α Argus -0·9 9 3 2 α Pictoris 3·3 9 3 2 α Pictoris 2·8 9 30 2 α Argus 2·8 9 30 2 α Argus 2·2 10 50 2 δ Argus 2·0 11 20 2 α Argus 2·0 11 20 2 α Argus 2·0 11 20 2 α Argus 2·0 11 20 2 α Argus 2·0 11 20 2 α Argus 3·0 12 3 2 2 α Argus 3·3 13 44 21 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	015
β Doradus 3.8 7 46 2.8 α Argus -0.9 9 3 2.2 α Pictoris 2.8 9 30 2.2 τ Argus 2.2 10 50 2.2 δ Argus 2.0 11 20 2.2 δ Argus 2.0 11 20 2.2 λ Argus 2.6 11 58 2.2 λ Argus 2.6 11 58 2.2 λ Argus 2.6 11 58 2.2 λ Argus 3.0 12 3 2.2 λ Argus 3.0 12 43 2.0 λ Centauri 3.3 13 44 2.1 λ Centauri 3.3 13 44 2.1 δ Crucis 3.1 14 41 2.2 γ Crucis 1.6 15 1 2.2 γ Centauri 2.9 14 47 2.3 γ Centauri 2.6 16 15 <t< td=""><td>226</td></t<>	226
α Argus -0.9 9 3 2 α Pictoris 3.3 9 3 2 τ Argus 2.8 9 30 2 ε Argus 1.7 10 49 2 γ Argus 2.0 11 20 2 δ Argus 2.0 11 20 2 κ Argus 2.6 11 58 2 κ Argus 2.6 11 58 2 κ Argus 2.6 11 58 2 κ Argus 3.4 12 35 2 α Argus 3.4 12 35 2 2 α Argus 3.3 13 44 23 2	2 I I
T Argus 2.8 9 30 25 ε Argus 1.7 10 49 21 γ Argus 2.0 11 20 22 λ Argus 2.0 11 20 22 λ Argus 2.6 11 58 22 Ν Velorum 3.0 12 3 22 θ Argus 3.0 12 3 22 θ Argus 3.4 12 35 21 θ Argus 2.8 13 26 23 λ Centauri 3.3 13 44 21 δ Crucis 1.1 14 34 21 δ Crucis 1.1 14 34 21 δ Centauri 2.9 14 47 23 γ Crucis 1.6 15 1 22 γ Crucis 1.6 15 1 22 γ Centauri 2.4 15 20 24 ε Centauri 2.4 15 20 24 ε Centauri 2.6 16 15 23 β Centauri 2.6 16 15 23 ζ Centauri 2.6 16 33 24 α Circini 3.1 16 33 24 α Circini 3.1 16 33 24 α Centauri 3.1 16 33 24 α Centauri 3.1 16 34 20 α Centauri 3.1 16 34 20 α Circini 3.4 16 34 20 α Centauri 3.7 16 37 21 α Lupi 3.7 17 57 20 β Triang. Aust. 3.0 17 57 20 β Aræ 3.6 19 36 20 β Aræ 3.6 19 36 20 β Aræ 3.7 20 8 23	232
E Argus 1.7 10 49 2.7 γ Argus 2.2 10 50 2.2 δ Argus 2.0 11 20 2.2 1 Argus 2.6 11 58 2.2 χ Argus 2.6 11 58 2.2 χ Argus 3.0 12 3 2.2 Q Carinæ 3.4 12 35 2.1 θ Argus 2.8 13 2.6 2.3 λ Centauri 3.3 13 44 2.1 δ Crucis 1.1 14 34 2.1 δ Crucis 1.1 14 34 2.1 δ Crucis 1.1 14 34 2.1 δ Crucis 1.5 15 10 2.1 γ Crucis 1.6 15 1 2.2 γ Crucis 1.6 15 1 2.2 γ Centauri 2.4 15 20 2.4 ε Centauri 2.6 16 15 2.3 ζ Centauri 2.6 16 15 2.3 ζ Centauri 2.6 16 15 2.3 ζ Centauri 3.1 16 33 2.4 α Circini 3.1 16 33 2.4 α Circini 3.4 16 34 2.0 α Centauri 3.1 16 3.3 2.4 α Centauri 3.1 16 3.3 2.4 α Centauri 3.1 16 3.3 2.4 α Circini 3.4 16 3.4 2.0 α Circini 3.5 17 47 2.3 β Triang. Aust. 3.0 17 57 2.0 ζ Aræ 3.1 19 2.8 2.2 η Pavonis 3.6 19 3.6 2.0 β Aræ 2.8 19 5.5 2.2 α Aræ 3.0 2.0 8 2.3 α Aræ 2.8 19 5.5 2.2 α Aræ 3.0 2.0 8 2.3 α Aræ	212
γ Argus 2·2 10 50 22 δ Argus 2·0 11 20 22 ι Argus 2·3 11 43 21 κ Argus 2·6 11 58 22 N Velorum 3·0 12 3 22 Q Carinæ 3·4 12 35 21 θ Argus 3·0 12 43 20 λ Centauri 2·8 13 26 23 λ Centauri 3·3 13 44 21 α Crucis 1·1 14 34 21 δ Centauri 2·9 14 47 23 γ Crucis 1·6 15 1 22 γ Centauri 2·4 15 20 24 ε Centauri 2·6 16 15 23 ζ Centauri 3·1 16 34 20 α Circini 3·4 16 34 20 α Centauri </td <td>236</td>	236
δ Argus 2.0 11 20 2.2 1 Argus 2.3 11 43 21 x Argus 2.6 11 58 22 N Velorum 3.0 12 3 22 Q Carinæ 3.4 12 35 21 θ Argus 3.0 12 43 20 μ Argus 2.8 13 26 23 λ Centauri 3.3 13 44 21 α Crucis 1.1 14 34 21 δ Crucis 1.1 14 34 21 γ Crucis 1.6 15 1 22 γ Crucis 1.6 15 1 22 22 γ Centauri 2.6 16 15 23 22	813
t Argus 2·3 II 43 2.2 x Argus 2·6 II 58 2.2 N Velorum 3·0 I2 3 2.2 q Carinæ 3·4 I2 35 2.1 θ Argus 3·0 I2 43 2.0 μ Argus 2·8 I3 26 2.2 λ Centauri 3·3 I3 44 21 α Crucis I·1 I4 34 21 δ Crucis I·1 I4 34 21 α Crucis I·1 I4 34 21 α Crucis I·1 I4 34 21 α Crucis I·1 I5 I5 I0 21 α Crucis I·5 I5 I5 I0 21 α Centauri 2·6 I6 I5 23 22 α Centauri 2·6 I6 I5 23 24 α Centauri 3·4 I6 34 20 α Circini <td>43</td>	43
x Argus 2.6	28
N Velorum 3.0 12 3 22 3 6 Argus 3.0 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 43 20 12 44 12 12 12 12 12 12 12 12 12 12 12 12 12	219
Q Carinæ 3·4 12 35 21 θ Argus 3·0 12 43 20 μ Argus 2·8 13 26 23 λ Centauri 3·3 13 44 21 α Crucis 1·1 14 34 21 δ Crucis 3·1 14 41 22 γ Crucis 1·6 15 1 23 γ Centauri 1·6 15 1 22 24 ε Centauri 2·6 16 15 23 24 ε Centauri 3·1 16 33 24 α Circini 3·4 16 34 20 α Circini 3·4 16 34 20 α Centauri 3·4 16 34 20 α Circini 3·5 17 47 23 α Lupi 2·9 17 19 24 ζ Aræ	27
θ Argus 3.0 12 43 20 μ Argus 2.8 13 26 23 λ Centauri 3.3 13 44 21 α Crucis 1.1 14 34 21 δ Crucis 3.1 14 47 23 γ Crucis 1.6 15 1 22 β Crucis 1.5 15 10 21 γ Centauri 2.4 15 20 24 ε Centauri 2.6 16 15 23 ζ Centauri 3.1 16 33 24 α Circini 3.4 16 34 20 α Centauri 3.4 16 34 20 α Centauri 3.4 16 34 20 α Circini 3.5 17 47 23 α Lupi 3.5 17 47 23 ζ Aræ 3.6	223
μ Argus 2.8 13 26 23 λ Centauri 3.3 13 44 21 α Crucis 1.1 14 34 21 δ Crucis 3.1 14 41 22 γ γ Crucis 1.6 15 1 22 γ Centauri 2.6 16 15 23 ξ Centauri 2.6 16 15 23 ζ Centauri 2.6 16 15 23 ζ Centauri 3.1 16 33 24 α Circini 3.4 16 34 20 α Circini 3.4 16 34 20 α Centauri 3.4 16 34 20 α Centauri 3.4 16 34 20 α Centauri 3.5 17 47 23 α Lupi 2.9 17 19 24 ζ Lupi 3.5 17 47 23 β Triang. Aust. 3.0 17 57 20 ζ Aræ 3.1 19 28 22 γ Pavonis 3.6 19 36 20 β Aræ 2.8 19 55 22 α Aræ 2.8 19 55 22 α Aræ 3.0 20 8 23	14
λ Centauri 3·3 13 44 21 α Crucis 1·1 14 34 21 δ Crucis 2·9 14 47 23 γ Crucis 1·6 15 1 22 β Crucis 1·6 15 1 22 γ Centauri 2·4 15 20 24 ε Centauri 2·6 16 15 23 ξ Centauri 3·1 16 33 24 α Circini 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 16 34 20 α Centauri 3·1 19 28 21 α Centauri 3·1 19 28 22 α α Aræ 3·1 19 36 20 α α Aræ 3·1 19 36 20 α α Aræ 3·1 19 36 20 α α Aræ 3·1 19 36 20 α α Aræ 3·1 19 55 22 α α Aræ 3·1 3·1 3 44 41 34 21 34 34 34 34 34 34 34 34 34 34 34 34 34	.07
α Crucis 1·1 14 34 21 δ Crucis 3·1 14 41 22 δ Centauri 2·9 14 47 23 γ Crucis 1·6 15 1 22 β Crucis 1·5 15 10 21 γ Centauri 2·4 15 20 24 ε Centauri 2·6 16 15 23 β Centauri 3·1 16 33 24 α Circini 3·4 16 34 20 α Centauri 3·4 16 34 20 α Circini 2·9 17 19 24 ζ Lupi 3·5 17 47 23 ζ Aræ 3·1 19 28 22 η Pavonis 3·6 19 36 20 α Aræ 3·0 20 8 23	39
δ Crucis 3.1 14 41 22 δ Centauri 2.9 14 47 23 γ Crucis 1.6 15 1 22 β Crucis 1.5 15 10 21 γ Centauri 2.6 16 15 23 β Centauri 3.1 16 33 24 ζ Centauri 3.4 16 34 26 α Circini 3.4 16 34 26 α Centauri 0.3 16 57 21 α Lupi 2.9 17 19 24 ζ Lupi 3.5 17 47 23 ζ Aræ 3.6 19 36 20 β Aræ 2.8 19 55 22 α Aræ 3.0 20 8 23	10
δ Centauri 2.9 14 47 23 γ Crucis 1.6 15 1 22 β Crucis 1.5 15 10 21 γ Centauri 2.4 15 20 24 ε Centauri 2.6 16 15 23 β Centauri 3.1 16 33 24 α Circini 3.4 16 34 26 α Centauri 0.3 16 57 21 α Lupi 2.9 17 19 24 ζ Lupi 3.5 17 47 23 β Triang Aust 3.0 17 57 20 γ Pavonis 3.6 19 36 20 β Aræ 2.8 19 55 22 α Aræ 3.0 20 8 23	10
γ Crucis 1.6 15 1 22 β Crucis 1.5 15 10 21 γ Centauri 2.4 15 20 24 ε Centauri 2.6 16 15 23 β Centauri 3.1 16 33 24 α Circini 3.4 16 34 26 α Centauri 3.4 16 34 26 α Centauri 3.5 17 47 23 α Lupi 2.9 17 19 24 ζ Lupi 3.5 17 47 23 β Triang. Aust. 3.0 17 57 26 γ Aræ 3.1 19 28 22 η Pavonis 3.6 19 36 26 β Aræ 2.8 19 55 22 α Aræ 3.0 20 8 23	20
β Crucis 1.5 15 10 21 γ Centauri 2.4 15 20 24 ε Centauri 2.6 16 15 23 β Centauri 0.9 16 23 21 ζ Centauri 3.1 16 33 24 α Circini 3.4 16 34 26 α Centauri 0.3 16 57 21 α Lupi 2.9 17 19 24 ζ Lupi 3.5 17 47 23 ζ Aræ 3.1 19 28 22 η Pavonis 3.6 19 36 20 β Aræ 2.8 19 55 22 α Aræ 3.0 20 8 23	-
γ Centauri 2·4 15 20 24 ε Centauri 2·6 16 15 23 β Centauri 0·9 16 23 21 ζ Centauri 3·1 16 33 24 α Circini 3·4 16 34 20 α Centauri 0·3 16 57 21 α Lupi 2·9 17 19 24 ζ Lupi 3·5 17 47 23 β Triang. Aust. 3·0 17 57 20 ζ Aræ 3·6 19 36 20 β Aræ 2·8 19 55 22 α Aræ 3·0 20 8 23	24
E Centauri 2·6 16 15 23 21 β Centauri 0·9 16 23 21 ζ Centauri 3·1 16 33 24 α Circini 3·4 16 34 20 α Centauri 0·3 16 57 21 α Lupi 2·9 17 19 24 ζ Lupi 3·5 17 47 23 β Triang. Aust. 3·0 17 57 20 ζ Aræ 3·1 19 28 22 η Pavonis 3·6 19 36 20 β Aræ 3·0 20 8 23 α Aræ 3·0 20 8 23	
β Centauri 0.9 16 23 21 ζ Centauri 3·1 16 33 24 α Circini 3·4 16 34 20 α Centauri 0·3 16 57 21 α Lupi 2·9 17 19 24 ζ Lupi 3·5 17 47 23 β Triang. Aust. 3·0 17 57 20 ζ Aræ 3·6 19 36 20 β Aræ 2·8 19 55 22 α Aræ 3·0 20 8 23	
ζ Centauri 3·1 16 33 24 α Circini 3·4 16 34 20 α Centauri 0·3 16 57 21 α Lupi 2·9 17 19 24 ζ Lupi 3·5 17 47 23 β Triang. Aust. 3·0 17 57 20 ζ Aræ 3·6 19 36 20 β Aræ 2·8 19 55 22 α Aræ 3·0 20 8 23	16
α Circini 3.4 16 34 20 α Centauri 0.3 16 57 21 α Lupi 2.9 17 19 24 ζ Lupi 3.5 17 47 23 β Triang. Aust. 3.0 17 57 20 ζ Aræ 3.1 19 28 22 η Pavonis 3.6 19 36 20 β Aræ 2.8 19 55 22 α Aræ 3.0 20 8 23	43
α Centauri 0·3 16 57 21 α Lupi 2·9 17 19 24 ζ Lupi 3·5 17 47 23 β Triang. Aust. 3·0 17 57 20 ζ Aræ 3·1 19 28 22 η Pavonis 3·6 19 36 20 β Aræ 2·8 19 55 22 α Aræ 3·0 20 8 23	205
α Lupi 2.9 17 19 24 ζ Lupi 3.5 17 47 23 β Triang. Aust. 3.0 17 57 20 ζ Aræ 3.1 19 28 22 η Pavonis 3.6 19 36 20 β Aræ 2.8 19 55 22 α Aræ 3.0 20 8 23	215
ζ Lupi 3.5 17 47 23 β Triang. Aust. 3.0 17 57 20 ζ Aræ 3.1 19 28 22 η Pavonis 3.6 19 36 20 β Aræ 2.8 19 55 22 α Aræ 3.0 20 8 23	43
β Triang. Aust. 3.0 17 57 20 ζ Aræ 3.1 19 28 22 η Pavonis 3.6 19 36 20 β Aræ 2.8 19 55 22 α Aræ 3.0 20 8 23	33
ζ Aræ 3·I 19 28 22 η Pavonis 3·6 19 36 20 β Aræ 2·8 19 55 22 α Aræ 3·0 20 8 23	209
η Pavonis 3.6 19 36 20 β Aræ 2.8 19 55 22 α Aræ 3.0 20 8 23	25
β Aræ 2·8 19 55 22 α Aræ 3·0 20 8 23	205
α Aræ 3·0 20 8 23	26
	37
~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~	45
α Pavonis 2·1 22 52 22	23
	42

Star. Mag. L. S.T. Az. δ Aquarii 3.5 0.15 316 c² Aquarii 3.8 0.57 299 β Ceti 2.2 2.16 309 γ Eridani 4.0 5.46 323 μ Leporis 3.3 6.34 316 ε Leporis 3.3 6.57 297 α Leporis 2.7 7 3.311 β Leporis 3.0 7 13 302 β Canis Majoris 2.0 7 53 311 α Canis Majoris -1.6 8 9 315 ο² Canis Majoris -1.6 8 9 315 ο² Canis Majoris -1.6 8 9 315 ο² Canis Majoris -1.6 8 9 315 ο² Canis Majoris -1.6 8 9 315 ο² Canis Majoris -1.6 8 9 315 ο² Canis Majoris -1.6 8 9 315 ο² Canis Majoris -1.6 8 <
δ Aquarii 3.5 0 15 316 c² Aquarii 3.8 0 57 299 β Ceti 2.2 2 16 309 γ Eridani 3.2 5 0 326 53 Eridani 4.0 5 46 323 μ Leporis 3.3 6 34 316 ε Leporis 2.7 7 3 311 β Leporis 2.7 7 3 311 β Canis Majoris 2.0 7 53 311 α Canis Majoris -1.6 8 9 315 α Canis Majoris -1.6 8 9 315 α Canis Majoris -1.6 8 9 315 α Canis Majoris -1.6 8 9 315 α Canis Majoris -1.6 8 9 315 α Canis Majoris -1.6 8 9 315 α Canis Majoris -1.6 8 9 315 α Canis Majoris -1.6 8 9 315 α Corvi 3.3 12 <td< td=""></td<>
η Ophiuchi 2.6 18 26 319 μ Sagittarii 3.6 20 43 301 π Sagittarii 3.0 20 55 301 α²Capricorni 3.8 21 11 331 β Capricorni 3.0 23 9 315 ζ Capricorni 3.9 23 19 296

Star. Mag. L. S.T. Az. h. m. γ Eridani ... 2 56 3.5 29 ε Leporis ... 60 3 10 3.3 53 Eridani... 4.0 30 3 33 β Leporis ... 56 3.0 3 40 40 μ Leporis ... 3.3 3 50 46 α Leporis ... 2.7 0 4 β Canis Majoris 46 2.0 50 4 o² Canis Majoris 3·1 64 5 3 α Canis Majoris 5 21 5 45 42 66 -1·6 ξ Argus 3.5 ρ Argus 6 65 2.9 5 38 ν Hydræ ... 3.3 9 31 δ Crateris ... 3.8 10 13 32 ε Corvi 3.2 10 14 60 62 β Corvi 2.8 10 36 γ Corvi 2.8 10 47 44 39 61 δ Corvi 3.1 II IO γ Hydræ ... II 2I 3.3 38 α Libræ ... 2.9 13 32 δ Scorpii ... 60 2.5 14 3 β¹Scorpii ... 14 22 52 2.9 η Ophiuchi 2.6 15 52 37 56 16 23 17 6 μ Sagittarii 4.0 ξ Sagittarii 3.6 57 17 π Sagittarii 17 18 57 3.0 β Capricorni 3·8 3·3 19 7 19 27 35 23 ... α² Capricorni ζ Capricorni 3.9 19 28 61 δ Capricorni 3.0 20 23 41 3.8 c² Aquarii ... 58 21 16 δ Aquarii ... 3.2 21 31 40 β Ceti 48 2.2 23

Star.	Mag.	L. S.T.	Az.
		h. m.	0
α Horologii	3.8	1 29	107
α Doradus	3.2	1 50	132
α Reticuli	3.4	1 52	148
β Doradus	3.8	3 11	147
α Argus	-0.9	3 37	127
τ Argus	2.8	4 2	123
α Pictoris	3.3	4 22	146
γ Argus	2.2	5 21	116
ε Argus	1.7	5 47	140
δ Argus	2.0	5 59	131
и Argus	2.6	6 37	131
ι Argus	2.3	6 40	140
и Velorum	3.0	6 49 .	135
q Carinæ	3.4	7 46	144
μ Argus	2.8	7 57 8 27	120
θ Argus	3.0	8 27	151
λ Centauri	3.3	9 11	148
δ Centauri	2.9	9 18	122
δ Crucis	3.1	9 35	138
γ Crucis	1.6	9 47	135
γ Centauri	2.4	9 51	119
α Crucis	I.I	10 1	148
β Crucis	1.5	10 9	140
ε Centauri	2.6	10 51	128
ζ Centauri β Centauri	3.1	11 4	115
β Centauri α Lupi	0.9	11 26	142 116
α Centauri	2.9	11 50 12 4	
Y T:	3·5	12 4 12 21	143 125
α Circini	3.4	12 26	152
β Triang. Aust.	3.0	13 30	149
ζ Aræ	3.1	14 11	134
β Aræ	2.8	14 36	133
α Aræ	3.0	14 38	121
η Pavonis	3.6	15 29	153
α Telescopii	3.8	15 36	114
α Pavonis	2·I	17 40	136
α Indi	3.2	17 46	117
α Gruis	2.2	19 17	116
α Tucanæ	2.9	19 44	144
β Gruis	2.2	19 52	116
ε Gruis	3.7	19 59	125
a Phanicis	2.4	21 39	107
β Phœnicis α Eridani	3.4	22 16	116
α Eridani φ Eridani	o∙6 3∙8	22 57 23 29	137 126
α Hydri	3.0	23 29 23 32	146
~,	, , ,	~; j~	-4
		1	<u> </u>

			<u> </u>
Star.	Mag.	L.S.T.	Az.
	·	h. m.	0
α Tucanæ	2.9	0 42	216
α Tucanæ α Gruis	2.2	0 49	244
β Gruis	2.2	I 24	244
ε Gruis	3.7	1 29	235
α Phænicis	2.4	3 5	253
β Phœnicis	3.4	3 48	244
α Eridani	0.6	4 13	223
α Hydri	3.0	4 20	214
φ Eridani	3.8	4 59	234
α Reticuli	3.4	6 34	212
α Doradus	3.5	7 14	228
β Doradus	3.8	7 55	213
α Argus	_ 0 .9	9 7	233
α Pictoris	3.3	9 12	214
τ Argus	2.8	9 34	237
γ Argus	2.2	10 53	244
ε Argus	1.7	10 55	220
δ Argus	2.0	11 25	229
LArgus	2.3	11 50	220
и Argus	2.6	12 3	229
и Velorum	3.0	12 9	225
q Carinæ	3.4	12 42	216
θ Argus	3.0	12 53	209
μ Argus	2.8	13 29	240
λ Centauri	3.3	13 53	212
α Crucis	1.1	14 43	212
δ Crucis	3.1	14 47	222
δ Centauri	2.9	14 50	238
γ Crucis	1.6	15 7	225 220
β Crucis	1.2	15 17	24I
γ Centauri	2.4	15 23 16 19	232
ε Centauri	0.9	16 30	218
β Centauri ζ Centauri	3.1	16 36	245
, a	3.4	16 46	208
α Circini α Centauri	0.3	17 4	217
Τ	2.9	17 22	244
ζ Lupi	3.2	17 51	235
β Triang. Aust.	3.0	18 6	211
ζ Aræ	3.1	19 33	226
η Pavonis	3.6	19 47	207
β Aræ	2.8	20 0	227
α Aræ	3.0	20 12	239
α Telescopii	3.8	21 6	246
α Pavonis	2.1	22 58	224
α Indi	3.5	23 18	243
}	-		

Star.	Mag.	L.S.T.	Az.
γ Eridani	3·2 3·3 4·0 3·3 2·3 3·4 3·5 3·3 3·4 2·5 3·3 3·4 2·5 3·3 3·4 2·5 3·3 3·3 3·3 3·3 3·3 3·3 3·3 3	h. m. 3 6 3 13 3 39 3 44 3 57 4 56 5 28 6 8 9 39 10 18 10 22 10 39 10 54 11 17 11 24 12 59 13 39 14 14 12 27 16 21 16 27 17 10 17 22 19 16 19 31 20 30 21 38 23 12	24 58 53 36 43 57 59 45 56 56 57 59 59 59 59 59 59 59 59 59 59

Star.		Mng.	L.S.T.	Az.
			h. m.	 •
α Horologii		3.8	1 28	105
α Reticuli		3.4		146
α Doradus		3.5	I 44 I 45	131
β Doradus		3.8	3 3	146
α Argus		-0.9	3 34	125
τ Argus		2·8	3 59	121
α Pictoris	••••	3.3	4 15	144
γ Argus		2.2	5 19	114
ε Argus	•••	1.4	5 41	138
δ Argus	•••	2.0	5 55	129
κ Argus ι Argus	•••	2.6	6 33	130
ι Argus N Velorum		2.3	6 34 6 44	138
q Carinæ		3·0	6 44 7 39	134 142
μ Argus		2.8	7 54	118
θ Argus		3.0	8 18	149
λ Centauri		3.3	9 3	146
δ Centauri		2.9	9 15	121
δ Crucis	•••	3.1	9 29	137
γ Crucis		1.6	9 42	133
γ Centauri	•	2.4	9 48	117
α Crucis	••••	1.1	9 53	146
β Crucis	•••	1.2	10 3	138
ε Centauri β Centauri	•••	2.6	10 47	126
α Lupi	•••	0·9 2·9	11 20 11 48	140 <i>114</i>
α Centauri		0.3	11 57	141
α Circini		3.4	12 17	151
ζ Lupi		3.5	12 18	124
β Triang. Au	st.	3.0	13 22	147
ζ Aræ	•••	3.1	14 6	132
β Aræ	••••	2.8	14 31	131
α Aræ	•••	3.0	14 36	120
η Pavonis	•••	3·6 3·8	15 20	151
α Telescopii α Pavonis	•••	3.8 2.1	15 34	112
α Indi	•••	3.5	17 34 17 44	134 115
δ Pavonis		3.6	17 54	155
β Pavonis	•••	3.6	18 32	155
α Gruis		2.2	19 15	115
α Tucanæ	••••	2.9	19 37	142
β Gruis	•••	2.2	19 50	115
ε Gruis	••••	3.7	19 56	124
α Phænicis β Phænicis	•••	2.4	21 38	105
α Eridani	•••	3·4 o·6	22 I4 22 52	115
α Hydri	•	3.0	23 24	145
φ Eridani	•••	3.8	23 26	124
•		-	ر ا	'

Star.	Mag.	L.S.T.	Az.
	' 	h. m.	
α Tucanæ	2.0		218
α Tucanæ α Gruis	2.9	0 49 0 51	245
β Gruis	2.2	1 26	245
ε Gruis	3.7	1 32	236
α Phænicis	2.4	3 6	255
β Phœnicis	3.4	3 50	245
α Eridani	0.6	4 18	224
α Hydræ	3.0	4 28	215
φ Eridani	3.8	5 2	. 236
α Reticuli	3.4	6 42	214
α Doradus	3.2	7 19	229
β Doradus	3.8	8 3	214
α Argus	-0.9	9 10	235
α Pictoris	3.3	9 19	216
τ Argus	2.8	9 37	239
γ Argus	2.2	10 55	246
ε Argus	1.7	11 1	222
δ Argus		11 29	231
ι Argus	2.3	11 56	222
к Argus	2.6	12 7	230
и Velorum	3.0	12 14	226
q Carinæ	3.4	12 49	218
θ Argus	3.0	13 2	211
μ Argus	2.8	13 32	242
λ Centauri	3.3	14 I	214
α Crucis	I.I	14 51	214
δ Centauri	2.9	14 53	239
δ Crucis	3.1	14 53	223
γ Crucis	1.6	15 12	227
β Crucis	1.2	15 23	222
γ Centauri	2.4	15 26	243
ε Centauri	2.6	16 23	234
β Centauri	0.9	16 36	220
α Circini	3.4	16 55	209
α Centauri	0.3	17 11	219
a Lupi	2.9	17 24	246
ζ Lupi	3.5	17 54	236
β Triang. Aust. ζ Aræ	3.0	18 14	213
	3.1	19 38	228
η Pavonis	3·6 2·8	19 56	209 229
β Aree α Aree	3.0	20 5 20 14	240
	3.8	21 8	248
δ Pavonis	3.6	22 8	205
β Pavonis	3.6	22, 44	205
α Pavonis	2·I	23 4	226
α Indi	3.2	23 20	245
	-		'-
			- 1

Star.	Mag.	L.S.T.	Az.
		h. m.	0
δ Aquarii	3.2	0 2	324
c² Aquarii	3.8	0 50	305
β Ceti	2.2	26	315
γ Eridani	3.2	4 42	336
53 Eridani	4.0	5 29	332
μ Leporis	3.3	6 21	324
ε Leporis	3.3	6 51	302
α Leporis	2.7	6 52	317
β Leporis β Canis Majoris	3·0	7 6 7 4 ²	307
α Canis Majoris	-1.6	7 42 7 56	317 322
o ² Canis Majoris	3.1	8 54	299
ξ Argus	3.2	9 44	296
ρ Argus	2.9	10 0	298
a Mali	3.7	11 6	275
ν Hydræ	3.3	11 53	326
δ Crateris	3⋅8	12 8	333
γ Corvi	2.8	13 30	320
δ Corvi	3.I	13 35	325
ε Corvi	3.2	13 54	303
β Corvi	2.8	14 21	301
γ Hydræ α Libræ	3.3	15 4	302 326
~ .,	2·9	15 53 16 59	295
γ Scorpu β¹Scorpii	2.9	17 35	311
δ Scorpii	2.5	17 44	302
η Ophiuchi	2.6	18 12	327
σ Şcorpii	3.1	18 18	294
θ Ophiuchi	3.4	19 17	295
μ Sagittarii	4.0	19 51	306
λ Sagittarii	2.9	20 25	294
ξ Sagittarii	3.6	20 36	306
π Sagittarii	3.0	20 48	306
β Capricorni	3.3	21 16 22 56	330
δ Capricorni ζ Capricorni	3.0	-	323
ζ Capricorni	3.9	23 13	301
1			
		-] [
		:	
			1 I
,			

L.S.T. Star. Mag. Az. 0 h. m. ε Leporis ... 3 16 3.3 55 β Leporis ... 3 48 3 50 3.0 50 22 53 Eridani ... 4.0 μ Leporis ... 3.3 4 5 32 α Leporis ... 2.7 4 12 39 β Canis Majoris 5 2.0 2 39 δ Canis Majoris 2.0 2 66 o² Canis Majoris 5 3·1 9 59 α Canis Majoris -1.6 5 35 34 61 5 51 ξ Argus 3.2 ρ Argus ... 60 2.9 ν Hydræ ... 9 47 30 3.3 ε Corvi ... 54 20 3.2 IO 22 8 Crateris ... 3.8 10 35 β Corvi 2.8 10 42 56 γ Corvi δ Corvi 2.8 11 36 I 3.1 11 25 31 γ Hydræ ... 56 II 27 3.3 π Hydræ ... 3.5 11 59 66 γ Scorpii ... 3.4 13 63 α Libræ ... 2.9 13 48 29 π Scorpii ... 65 3.0 13 53 δ Scorpii ... 2.5 14 10 55 σ Scorpii ... 64 3.1 14 17 a Scorpii ... 14 22 66 1.2β¹ Scorpii ... 46 2.9 14 32 θ Ophiuchi 62 3.4 15 20 Ophiuchi 28 2.6 16 9 λ Sagittarii 16 24 2.9 64 μ Sagittarii 16 31 4.0 51 **2**∙1 σ Sagittarii 16 47 67 ξ Sagittarii 3.6 17 14 51 π Sagittarii 17 26 51 3.0 β Capricorni 19 26 25 3.3 ζ Capricorni 3.9 19 35 56 δ Capricorni 20 37 3.0 33 c² Aquarii ... 3.8 21 24 53 δ Aquarii ... 21 46 3.2 32 β Ceti 23 18 4I 2.2

Star.	Mag.	L. S.T.	Az.
α Reticuli α Doradus β Doradus α Argus α Argus α Pictoris ε Argus α Argus λ Argus λ Argus ν Argus μ Argus λ Centauri δ Centauri δ Crucis α Centauri α Circini α Centauri α Circini α Centauri α Circini α Centauri α Circini α Crucis α Crucis α Crucis α Crucis α Aræ α Ar	3.4 3.5 3.8 -0.8 3.7 2.6 3.3 3.9 1.6 1.6 1.6 1.6 1.6 1.6 1.6 1.6	h. m. 1 37 1 40 2 56 3 356 4 35 5 50 6 29 6 39 7 51 8 56 6 39 7 51 8 56 9 23 9 45 9 45 9 45 11 14 12 14 13 14 14 27 14 33 15 32 17 29 17 43 18 19 52 22 47 23 17 23 22	145 129 144 124 120 143 137 127 128 136 132 141 117 147 144 119 135 132 144 116 137 125 139 140 149 122 146 130 129 118 149 111 133 153 153 153 153 153 153 153 153

Star.	Mag.	L. S.T.	Az.
α Tucanæ ε Gruis α Phænicis β Phænicis α Eridani α Hydri φ Eridani α Reticuli	2·9	h. m.	220
	3·7	0 55	238
	2·4	1 36	256
	3·4	3 52	247
	0·6	4 23	226
	3·0	4 35	217
	3·8	5 6	238
	3·4	6 49	215
α Doradus β Doradus α Argus α Pictoris τ Argus ε Argus δ Argus ι Argus κ Argus ν Velorum	3·5	7 24	231
	3·8	8 10	216
	-0·9	9 14	236
	3·3	9 26	217
	2·8	9 40	240
	1·7	11 7	223
	2·0	11 34	233
	2·3	12 1	224
	2·6	12 12	232
	3·0	12 19	228
q Carinæ θ Argus μ Argus λ Centauri δ Centauri δ Crucis γ Crucis γ Centauri β Crucis γ Centauri β Crucis	3.4	12 56	219
	3.0	13 11	213
	2.8	13 35	243
	3.3	14 9	216
	2.9	14 56	241
	1.1	14 59	216
	3.L	14 59	225
	1.6	15 17	228
	2.4	15 29	244
	1.5	15 29	223
E Centauri β Centauri α Circini α Centauri ζ Lupi β Triang. Aust. ζ Aræ η Pavonis β Aræ α Aræ	2.6 0.9 3.4 0.3 3.5 3.0 3.1 3.6 2.8	16 27 16 42 17 4 17 17 17 58 18 22 19 43 20 5 20 9 20 17	235 221 211 220 238 214 230 211 231 242
α Telescopii	3.8	21 10	249
δ Pavonis	3.6	22 19	207
β Pavonis	3.6	22 55	207
α Pavonis	2.1	23 9	227

Star.	Mag.	L. S.T.	Az.
		h. m.	•
c² Aquarii	3.8	0 46	307
β Ceti	2.2	2 0	319
53 Eridani	4.0	5 18	338
μ Leporis	3.3	6 13	328
α Leporis	2.7	6 46	321
ε Leporis	3.3	6 48	305
β Leporis	3.0	7 2	310
β Canis Majoris	2·0 –1·6	7 36	321 326
α Canis Majoris o² Canis Majoris	3.1	7 49 8 51	301
δ Canis Majoris	2.0	9 8	294
ξ Argus	3.2	9 41	299
ρ Argus	2.9	9 57	300
a Mali	3.7	11 5	277
ν Hydræ	3.3	11 45	330
δ Crateris	3.8	11 55	340
γ Corvi	2.8	13 23	324
δ Corvi	3.1	13 27	329
ε Corvi	3.2	13 50	306
β Corvi γ Hydræ	2.8	14 18 15 1	304
* * * 1	3·3 2·9	15 I 15 44	304 331
π Libræ π Hydræ	3.5	16 6	294
γ Scorpii	3.4	16 56	297
β¹Scorpii	2.9	17 30	314
δ Scorpii	2.5	17 40	305
π Scorpii	3.0	17 55	295
η Ophiuchi	2.6	18 3	332
σ Scorpii	3.1	18 15	296
α Scorpii	1.2	18 26	294
θ Ophiuchi	3·4 4·0	19 14	298 309
μ Sagittarii λ Sagittarii	2.9	19 47 20 22	296
ξ Sagittarii	3.6	20 32	309
π Sagittarii	3.0	20 44	329
o Sagittarii	2.1	20 53	293
	3.3	21 6	335
δ Capricorni	3.0	22 49	327
ζ Capricorni	3.9	23 9	304
δ Aquarii	3.2	23 54	328
	1		
			1
İ	1		
ļ			
		4	
			
	-		

LATITUDE 44º SOUTH.

NE. QUADRANT SE. QUADRANT

Star.	Mag.	L.S.T.	Az.
	3.6 3.3 3.0 3.3 2.7 2.0 3.1 3.5 3.2 2.8 3.1 3.5 3.2 2.8 3.1 3.5 3.6 3.7 2.9 3.6 3.7 2.9 3.6 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7		83 53 47 27 35 64 35 56 29 59 58 24 52 54 31 53 25 64 42 60 63 23 62 48 66 64 48 48 53 28 50 27

Star.	Mag.	L.S.T.	Az.
		h. m.	0
α Reticuli	3.4	I 29	143
α Doradus	3.2	1 36	128
β Doradus	3.8	2 48	142
α Argus	-0.9	3 26	122
τ Argus	2.8	3 53	118
α Pictoris	3.3	4 I	141
δ Volantis	4.0	4 57	154
ε Argus	1.7	5 29	135
δ Argus	2.0	5 45	126
ι Argus	2.3	6 23	135
ж Argus	2.6	6 24	127
N Velorum	3.0	6 34	131
q Carinæ	3.4	7 25	139
μ Argus θ Argus	2.8	7 49	115
θ Argus λ Centauri	3.0	8 0	146
δ Centauri	3.3	8 48	143
δ Crucis	2.9	9 9	118
γ Crucis	1.6		134
α Crucis	1.1	9 32 9 38	130
γ Centauri	2.4	9 38 <i>9 43</i>	143 <i>114</i>
β Crucis	1.2	9 51	135
β Muscæ	3.3	IO 2I	154
ε Centauri	2.6	10 38	123
β Centauri	0.9	11 8	137
α Centauri	0.3	11 45	138
α Circini	3.4	11 58	147
ζ Lupi	3.5	12 10	IZI
	3.1	12 54	155
γ Triang. Aust. β Triang. Aust. ζ Aræ	3.0	13 5	144
ζ Aræ	3.1	13 56	129
β Aræ	2.8	14 22	128
α Aræ	3.0	14 30	117
η Pavonis	3.6	15 1	147
α Telescopii	3⋅8	<i>15 30</i>	109
α Pavonis	2· I	17 24	131
δ Pavonis	3.6	17 32	151
β Pavonis	3.6	18 10	151
α Tucanæ ε Gruis	2.9	19 24	139
ε Gruis α Phænicis	3·7 2·4	19 48 21 35	121 102
β Phænicis	3.4	22 10	112
α Eridani	0.6	22 4I	133
α Hydri	3.0	23 10	141
φ Eridani	3.8	23 18	121
	-	,	
4			1

Star.	Mag.	L.S.T.	Az.
		h. m.	0
α Tucanæ	2.9	I 2	221
ε Gruis	3.7	1 40	239
a Phænicis	2.4	39	258
β Phænicis	3.4	3 54	248
α Eridani	0.6	4 29	227
α Hydri	3.0	4 42	219
φ Eridani	3.8	5 10	239
α Reticuli	3.4	6 57	217
α Doradus	3.2	7 28	232
β Doradus	3.8	8 18	218
α Argus	-0.9	9 18	238
α Pictoris δ Volantis	3.3	9 33	219 206
	4·0 2·8	9 37	242
τ Argus ε Argus	1.7	9 43	225
ε Argus δ Argus	2.0	11 39	234
i Argus	2.3	12 7	225
x Argus	2.6	12 16	233
N Velorum	3.0	12 24	229
q Carinæ	3.4	13 3	221
θ Argus	3.0	13 20	214
μ Argus	2.8	13 37	245
λ Centauri	3.3	14 16	217
δ Centauri	2.9	14 59	242
α Crucis	1.1	15 6	217
β Muscæ	3.3	15 I	206
δ Crucis	3.1	15 4	226
γ Crucis	1.6	15 22	330
Y Centauri	2.4	15 31	246
β Crucis	1.5	15 35	225
ε Centauri	2.6	16 32 16 48	237
β Centauri	0.9		223
α Circini α Centauri	3·4 o·3	17 14 17 23	222
	3.1	17 28	205
γ Triang. Aust. ζ Lupi	3.2	18 2	239
β Triang. Aust.	3.0	18 30	216
β Triang. Aust. ζ Aræ	3. I	19 48	231
β Aræ	2.8	20 I4	232
η Pavonis	3.6	20 15	213
α Aræ	3.0	20 20	243
a. Telescopii	3.8	21 12	251
δ Pavonis	3.6	22 30	209
β Pavonis	3.6	23 6	209
α Pavonis	2·I	23 14	229
		0.	
	-1-	ļ	
ļ			

Star.	Mag.	L. S. T.	Az.
	_	h. m.	0
c² Aquarii	3.8	0 42	310
β Ceti	2.2	I 53	323
53 Eridani	4.0	5 0	347
μ Leporis	3.3	6 3	333
α Leporis	2.7	6 39	325
ε Leporis	3.3	6 44	307
β Leporis	3.0	6 57	313
β Canis Majoris	2.0	7 29	325
α Canis Majoris	-1.6	7 40	33I
o ² Canis Majoris	3.1	8 48	304
δ Canis Majoris	2.0	9 5	296
ξ Argus	3.2	9 38	301
ρ Argus	2.9	9 54	302
a Mali	3.7	11 4	279
v Hydræ	3-3	11 35	<i>336</i>
γ Corvi	2.8	13 14	329
δ Corvi	3.1	13 17	335
ε Corvi	3.2	13 46	308
β Corvi	2.8	14 14	306
γ Hydræ	3.3	14 57	307
α Libræ	2.9	15 33	337
π Hydræ	3.2	16 2	296
~ ' ••	3.4	16 53	300
610	2.9	17 25	318
8 Scorpii	2.5	17 36	308
	2.6	17 50	337
· ~ · ·	3.0	17 52	297
σ Scorpii	3.1	18 12	299
α Scorpii	1.5	18 24	296
00177	3.4	19 11	300
	4.0	19 43	312
μ Sagittarii λ Sagittarii		20 19	298
	2·9 3·6	20 27	312
ξ Sagittarii π Sagittarii	3.0		312
	3.3	20 39 20 45	294
	2·I	20 51	296
δ Sagittarii δ Capricorni	3.0	22 40	332
	, ,		307
ζ Capricorni δ Aquarii	3·5	23 5 23 44	333
o Aquam	3.2	23 44	333
ł			
			1.5
		1	1

LATITUDE 45° SOUTH.

NE. QUADRANT

Star.	Mag.	L. S.T.	Az.
	<u>' </u>	h. m.	0
υ ⁴ Eridani	3.6	1 49	81
ε Leporis	3.3	3 25	50
β Leporis	3.0	3 58	43
μ Leporis	3.3	4 27	20
α Leporis	2.7	4 28	30
22 Canis Majoris	3.7	4 54	66
δ Canis Majoris	2.0	5 8	62
o ² Canis Majoris	3.1	5 16	53
β Canis Majoris	2.0	5 18	30
a Canis Majoris	<i>−1</i> ⋅6		23
ξ Argus	3.2	5 57 6 18	56
ρ Argus		1	55
ε Corvi β Corvi	3.2	10 31	49
or Correi	2.8	10 50	51
	2.8	11 19	26
- Und-	3.3	11 35	50 62
π Hydræ γ Scorpii	3.5	12 5	58
- Coornii	3.4	13 59	60
δ Scorpii	2.5	14 18	49
σ Scorpii	1	14 23	59
τ Scorpii	2.9	14 26	66
α Scorpii	1.2	14 27	61
β¹ Scorpii		14 44	38
θ Ophiuchi	1	15 26	57
λ Sagittarii	1	16 30	59
μ Sagittarii	4.0	16 40	45
φ Sagittarii	3.3	16 40	64
σ Sagittarii	2.1	16 52	62
τ Sagittarii	3.4	16 58	66
ξ Sagittarii		17 24	45
π Sagittarii		17 36	45
ζ Capricorni		19 43	50
δ Capricorni		20 58	22
c² Aquarii δ Aquarii	3.8	21 33	46
δ Aquarii β Ceti	3.5	22 8	20
р оем	2.2	23 33	33
	1		
	1		

Star.	Mag.	L. S.T.	Az.
α Reticuli α Doradus β Doradus α Argus τ Argus α Pictoris δ Volantis ε Argus λ Argus ν Argus ν Argus ν Argus ν Argus ν Carinæ θ Argus λ Centauri δ Crucis γ Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Crucis β Crucis α Crucis α Crucis α Crucis β Crucis α Crucis β Crucis α Crucis β Crucis α Crucis α Crucis β Crucis α Crucis α Crucis β Crucis α Crucis α Crucis α Crucis α Crucis β Crucis α α Crucis α α Crucis	3.4 3.5 3.8 9.8 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9	h. m. 1 22 1 32 2 41 3 22 3 50 3 54 4 47 5 42 6 18 6 20 6 30 7 19 7 52 8 41 9 13 9 28 9 31 9 46 10 10 10 35 11 39 11 50 12 7 12 44 12 58 13 52 14 17 14 18 14 28	142 126 141 121 117 139 152 134 125 134 125 138 144 141 116 132 129 141 134 155 152 122 136 137 145 145 141 145 152 128 154 141
α Circini ζ Lupi γ Triang. Aust. β Triang. Aust. ζ Aræ α Triang. Aust. β Aræ	3.4 3.5 3.1 3.0 3.1 1.9 2.8	11 50 12 7 12 44 12 58 13 52 14 17 14 18	145 119 154 142 128 155
	3		

Star.	Mag.	L.S.T.	Az.
		h. m.	0
c² Aquarii	3.8	0 37	314
β Ceti	2.2	I 45	327
μ Leporis	3.3	5 51	340
α Leporis	2.7	6 30	330
ε Leporis	3.3	6 39	310
β Leporis	3.0	6 52	3 ¹ 7
β Canis Majoris α Canis Majoris	2·0 -1·6	7 20 7 29	330 337
α Canis Majoris o ² Canis Majoris	3.1	8 44	
22 Canis Majoris	3.7	9 2	307 294
δ Canis Majoris	2.0	9 2	298
ξ Argus	3.2	9 35	304
ρ Argus	2.9		305
a Mali	3.7	11 3	281
γ Corvi	2.8	13 5	334
ε Corvi	3.2	13 41	311
β Corvi	2.8	14 10	309
γ Hydræ	3.3	14 53	310
π Hydræ γ Scorpii	3.5	15 59 16 50	298 302
γ Scorpii β¹Scorpii	3·4 2·9	16 50 17 18	322
δ Scorpii	2.2	17 32	311
π Scorpii	3.0	17 49	300
σ Scorpii	3.1	18 9	301
α Scorpii	I·2	18 2 I	299
τ Scorpii	$2 \cdot 9$	18 36	294
θ Ophiuchi	3.4	19 8	303
μ Sagittarii	4.0	19 38	315
λ Sagittarii	2.9	20 16	301
ξ Sagittarii π Sagittarii	3.6	20 22 20 34	315
	3·3	20 34 20 42	315 296
φ Sagittarii σ Sagittarii	2·I	20 48	298
τ Sagittarii	3.4	21 6	294
δ Capricorni	3.0	22 28	338
ζ Capricorni	3.9	23 I	310
δ Aquarii	3.5	23 32	340
_			
1			

Star. Mag. L. S.T. Az. h. m. υ⁴ Eridani ... 1 50 79 3.6 2.7 a Columbæ 3 11 80 ε Leporis ... 46 3.3 3 31 β Leporis ... 3.0 4 39 α Leporis ... 4 38 25 2.7 E Canis Majoris 4 49 66 1.6 22 Canis Majoris 63 3.7 4 57 δ Canis Majoris .2.0 5 11 59 o² Canis Majoris 5 20 3.1 50 β Canis Majoris 5 28 25 2.0 ξ Argus 3.2 I 53 ρ Argus 6 22 52 2.9 ε Corvi 10 36 45 ... 3.2 10 55 11 32 β Corvi 2.8 48 Y Corvi <u>20</u> 2.8 γ Hydræ ... 11 40 3.3 47 π Hydræ ... 12 3.2 59 γ Scorpii ... 55 13 12 3.4 π Scorpii ... 58 3.0 14 2 δ Scorpii ... 46 2.5 14 23 56 64 σ Scorpii ... 3.1 14 27 τ Scorpii ... 2.9 14 29 α Scorpii ... 14 31 58 I · 2 β¹Scorpii ... 2.9 14 52 34 θ Ophiuchi 15 30 54 3.4 λ Sagittarii 16 33 56 2.9 16 43 φ Sagittarii 3.3 61 μ Sagittarii 16 47 4.0 **4**I σ Sagittarii 16 56 2· I 59 → Sagittarii 63 17 3.4 I ξ Sagittarii 3.6 17 30 41 π Sagittarii 17 42 3.0 41 ζ Capricorni 3.9 47 70 19 48 a Piscis Australis 1.3 20 41 c2 Aquarii ... 3.8 1 21 39 43 β Ceti 2.5 23 42

Star.	Mag.	L. S.T.	Az.
		h. m.	0
α Reticuli α Doradus β Doradus α Argus α Argus α Pretoris δ Volantis ε Argus λ Argus λ Argus λ Argus λ Argus λ Argus λ Argus λ Carinæ θ Argus λ Centauri δ Centauri δ Crucis α Crucis γ Crucis	3.4 3.5 3.8 -0.9 2.8 3.3 4.0 1.7 2.0 2.3 2.6 3.9 3.1 1.1 1.6	h. m. 1 15 1 28 2 35 3 19 3 47 3 48 4 37 5 19 5 38 6 16 6 26 6 41 7 13 7 45 8 34 9 24 9 24	140 125 139 120 115 138 151 133 123 124 128 154 136 143 140 115 131 140
γ Crucis	1.6 1.5 2.3 2.0 3.4 3.1 3.1 3.1 3.2 3.3 3.4 3.5 3.5 3.6 3.6 3.7 3.6 3.7 3.6 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7	9 24 9 41 9 56 10 0 10 32 10 56 11 33 11 43 12 4 12 34 12 51 13 48 14 45 17 16 17 51 19 12 22 5 22 32 22 57 23 12	128 133 153 150 120 134 135 144 118 152 141 126 153 125 144 148 148 148 136 118

SW. QUADRANT NW. QUADRANT

Star.	Mag.	L.S.T.	Az.
Star. α Tucanæ ε Gruis α Eridani α Hydri φ Eridani α Reticuli α Doradus β Doradus α Argus α Pictoris τ Argus δ Volantis ε Argus β Argus β Argus	2·9 3·7 3·4 0·6 3·0 3·8 3·4 3·5 3·8 -0·9 3·3 2·8 4·0 1·7 1·8	h. m. 1 14 1 46 3 59 4 38 4 55 5 16 7 11 7 36 8 31 9 25 9 46 9 49 9 57 11 23 11 44	Az. 224 242 251 230 222 242 220 235 221 240 222 245 209 227 206
β Argus δ Argus κ Argus Ν Velorum q Carinæ θ Argus λ Centauri δ Centauri α Muscæ δ Crucis α Crucis	2.0 2.3 2.6 3.0 3.4 3.0 3.3 2.9 2.9 3.1 1.1	11 44 11 46 12 18 12 24 12 32 13 15 13 35 14 30 15 5 15 8 15 14 15 20	237 228 236 232 224 217 220 245 207 229
β Muscæ γ Crucis β Crucis ε Centauri β Centauri α Circini α Centauri γ Triang. Aust. ζ Lupi β Triang. Aust. α Triang. Aust.	3·3 1·6 1·5 2·6 0·9 3·4 0·3 3·1 3·5 3·0 1·9	15 22 15 30 15 45 16 38 17 0 17 29 17 35 17 48 18 8 18 45 19 14	210 232 227 240 226 216 225 208 242 219
A Triang. Austria Aræ β Aræ γ Pavonis δ Pavonis α Pavonis β Pavonis	3·1 2·8 3·6 3·6 2·1 3·6	19 56 20 22 20 31 22 48 23 22 23 25	234 235 216 212 232 212

Star.	Mag.	L. S.T.	Az.
		h. m.	0
C ² Aquarii	Mag. 3.8 1.3 2.2 2.7 3.3 2.0 2.7 3.1 3.7 2.8 3.3 3.5 3.4 2.9 3.4 2.9 3.4 2.9 3.4 3.9 3.4 3.9		

L. S.T. Star. Mag. Az. 0 h. m. υ⁴ Eridani ... 77 3.6 1 51 a Columba 2.7 3 12 78 ε Leporis ... 3.3 3 37 42 ζ Canis Majoris 3.1 67 β Leporis ... 3.0 4 14 35 ε Canis Majoris 1.6 4 52 64 22 Canis Majoris 3.7 5 0 61 δ Canis Majoris 2.0 5 15 56 5 16 65 n Canis Majoris 2.4 5 o² Canis Majoris 3.I 25 47 ξ Argus 6 5 6 26 3.2 50 ρ Argus 2.9 49 ε Corvi 3.2 10 42 41 β Corvi 2.8 ΙI I 44 γ Hydræ ... 11 46 3.3 43 π Hydræ ... 3.2 **I2 II** 56 γ Scorpii ... 52 13 16 3.4 π Scorpii ... 3.0 6 55 14 δ Scorpii ... 2.5 14 30 42 σ Scorpii ... 3.1 14 31 53 τ Scorpii ... 61 2.9 14 32 α Scorpii ... I • 2 56 14 34 β¹ Scorpii ... 2.9 15 29 I θ Ophiuchi 15 34 3·4 2·8 52 δ Sagittarii 16 Š 67 λ Sagittarii 16 37 2.9 ••• 54 φ Sagittarii 16 46 3.3 59 μ Sagittarii 16 55 37 56 4.0 σ Sagittarii 2 · I 16 59 Sagittarii 61 3.4 17 3.6 **E** Sagittarii 17 38 37 π Sagittarii 3.0 17 50 37 ζ Capricorni 3·9 1·3 19 53 20 44 44 67 a Piscis Australis 39 22 c² Aquarii ... 3.8 21 46 B Ceti 2.2 23 55

Star.	Mag.	L. S.T.	Az.
	I	h. m.	0
α Reticuli	3.4	r 8	138
α Doradus	3.2	I 24	123
β Doradus	3.8	2 28	138
α Argus	-0.9	3 16	118
α Pictoris	3.3	3 41	137
δ Volantis	4.0	4 27	149
ε Argus	i·7	5 13	131
δ Argus	2.0	5 34	122
LArgus	2.3	6 7	131
ж Argus	2.6	6 12	I 22
и Velorum	3.0	6 21	126
β Argus	1.8	6 28	152
q Carinæ	3.4	7 7	135
θ Argus	3.0	7 38	141
λ Centauri δ Crucis	3.3	8 27	138
	3.1	9 3	130
α Crucis γ Crucis	1.Q	9 17	138
γ Crucis β Crucis		9 19	126
α Muscæ	1.2	9 35	131
β Muscæ	2·9	9 45	151
ε Centauri	2.6	9 50 10 28	149
β Centauri	0.9	10 51	133
α Centauri	0.3	11 27	134
α Circini	3.4	11 35	142
ζ Lupi	3.5	I2 I	117
γ Triang. Aust.	3.1	12 23	150
β Triang. Aust.	3.0	12 45	139
ζ Aræ	3.1	13 44	125
α Triang. Aust.	1.9	13 55	151
β Aræ	2.8	14 10	124
η Pavonis	3.6	14 37	143
δ Pavonis	3.6	17 5	146
α Pavonis	2.1	17 11	127
β Pavonis	3.6	17 42	146
α Tucanæ	2.9	19 6	134
ε Gruis	3.7	19 39	110
β Phænicis α Eridani	3.4	22 4	107
α Eridani α Hydri	o∙6 3·o	22 27	128
φ Eridani	3.8	22 51 23 9	137 117
4 minomin	יים	23 9	**/
1		, , ,	

Star.	Mag.	L.S.T.	Az.
		h. m.	0
α Tucanæ	2.9	I 20	226
ε Gruis	3.7	I 49	244
β Phænicis	3.4	4 0	253
α Eridani	0.6	4 43	232
α Hydri	3.0	5 I	223
φ Eridani	3.8	5 19	243
α Reticuli	3.4	7 18	222
α Doradus β Doradus	3.8	7 40 8 38	237
1 · 1	-0.9	9 28	242
α Argus α Pictoris	3.3	9 53	223
δ Volantis	4.0	10 7	211
ε Argus	1.7	11 29	229
δ Argus	2.0	11 50	238
β Argus	1.8	11 56	208
Argus	2.3	12 23	229
х Argus	2.6	12 28	238
и Velorum	3.0	12 37	234
q Carinæ	3.4	13 21	225
0 Argus	3.0	13 42	219
λ Centauri	3.3	14 37	222
δ Crucis	3.1	15 19	230
α Muscæ	2.9	15 19	209
α Crucis	I.I	15 27	222
β Muscæ	3.3	15 32	211
γ Crucis	1.6	15 35	234
β Crucis ε Centauri	2.6	15 51 16 42	241
ε Centauri β Centauri	0.9	17 5	227
α Circini	3.4	17 37	218
α Centauri	0.3	17 41	226
1	3.1	17 59	210
γ Triang. Aust.	3.2	18 11	243
β Triang. Aust.	3:0	18 51	221
α Triang. Aust.	1.9	19 25	209
ζ Aræ	3.1	20 0	235
β Aræ	2.8	20 26	236
η Pavonis	3.6	20 39	217
δ Pavonis	3.6	22 57	214
α Pavonis	2·1 3·6	23 27 23 34	233 214
β Pavonis	5.0	23 34	~~4
×			10
100			
	1		

SE. QUADRANT

Star.	Mag.	L. S.T.	Az.
		h. m.	0
α Reticuli	3.4	II	137
α Doradus	3.5	I 20	122
β Doradus	3.8	2 21	137
α Argus	-0.9	3 13	117
α Pictoris	3.3	3 35	135
δ Volantis	4.0	4 17	148
ε Argus δ Argus	1.7	5 8	130
δ Argus ι Argus	2.0	5 30 6 2	120
ж Argus	2·3 2·6	6 2	130 121
N Velorum	3.0	6 16	121
β Argus	1.8	6 18	151
q Carinæ	3.4	7 I	133
θ Argus	3.0	7 30	140
λ Centauri	3.3	8 20	137
δ Crucis	3.1	8 58	128
α Crucis	I.I	9 10	137
γ Crucis	1.6	9 14	125
β Crucis α Muscæ	1.2	9 30	130
α Muscæ β Muscæ	2.9	9 35	150
ε Centauri	3·3 2·6	9 40 10 25	147 118
β Centauri	0.9	10 45	132
α Centauri	0.3	II 2I	133
α Circini	3.4	11 27	141
ζ Lupi	3.5	11 58	115
γ Triang. Aust.	3.1	12 13	149
β Triang. Aust.	3.0	12 38	138
ζ Aræ	3.1	13 40	123
α Triang. Aust. β Aræ	1.9	13 44	150
	2·8 3·6	14 6 14 30	122 141
η Pavonis δ Pavonis	3.6	16 56	145
α Pavonis	2·I	17 6	126
β Pavonis	3.6	17 33	145
α Tucanæ	2.9	19 0	133
ε Gruis	3.7	19 36	115
β Phænicis	3.4	22 2	106
α Eridani α Hydri	0.6	22 22	127
φ Eridani	3·8	22 44 23 6	136
ψ 1311αα111	ى ا	23 6	
	i		
*			
2		-	

NW. QUADRANT SW. QUADRANT

Star.	Mag.	L. S.T.	Az.
		h. m.	0
α Tucanæ	2.9	I 26	227
ε Gruis	3.7	1 52	245
β Phænicis	3⋅4	4 2	254
α Eridani	0.6	4 48	233
α Hydri	3.0	5 8	224
φ Eridani	3.8	5 22	245
α Reticuli	3.4	7 25	223
α Doradus β Doradus	3.2	7 44 8 45	223
β Doradus α Argus	-0.9	9 31	243
α Pictoris	3.3	9 59	225
δ Volantis	4.0	10 17	212
ε Argus	1.7	11 34	230
δ Argus	2.0	11 54	240
β Argus	1:8	12 6	209
ι Argus	2.3	12 28	230
ж Argus	2.6	12 32	239
N Velorum	3.0	12 42	235
q Carinæ	3.4	13 27	227
θ Argus	3.0	13 50	220
λ Centauri δ Crucis	3:3 ·3·1	14 44 15 24	232
α Muscæ	2.9	15 29	210
α Crucis	I.I	15.34	223
γ Crucis	1.6	15 40	235
β Muscæ	3.3	15 42	213
β Crucis	1.2	15 56	230
ε Centauri	2.6	16 45	242
β Centauri	0.9	17 11	228
α Circini	3.4	17 45	219
α Centauri	0.3	17 4 7 18 9	227 211
γ Triang. Aust. ζ Lupi	3.2	18 9 18 14	245
β Triang. Aust.	3.0	18 58	222
α Triang. Aust.	1.9	19 36	210
ζ Aræ	3.1	20 4	237
β Aræ	2.8	20 30	238
η Pavonis	3:6	20.46	219
δ Pavonis	3.6	23 6	215
α Pavonis	3·6	23 32	234
β Pavonis	3.0	23 43	213
			j
1			

			 ,
Star.	Mag.	L.S.T.	Az.
		h. m.	0
c² Aquarii	3.8	a 16	326
α Piscis Australis	1.3	0 59	295
ε Leporis	3.3	6 21	322
β Leporis	3.0	6 27	330
υ ⁴ Erīdani	3.6	6 38	285
α Columbæ	2.7	8 0	284
ζ Canis Majoris	3.I	8 23	295
o ² Canis Majoris	3.1	8 29	316
δ Canis Majoris	2.0	8 51	307
22 Canis Majoris	3.7	8 53 8 55	302
E Canis Majoris	1:6		299
ξ Argus η Canis Majoris	3·5 2·4	9 22 9 23	313 298
η Canis majoris ρ Argus	2.9	9 36	315
a Mali	3.7	10 59	287
ε Corvi	3.2	13 22	323
β Corvi	2.8	13 52	320
γ Hydræ	3.3	14 35	321
π Hydræ	3.2	15 49	307
γ Scorpii	3.4	16 37	311
β¹ Scorpii	2.9	16 49	337
δ Scorpii	2.2	17 13	322
π Scorpii	3.0	17 38	308
σ Scorpii	3.I	17 57	310
α Scorpii	1:2	18 10 18 27	307 301
τ Scorpii θ Ophiuchi	2.9	18 27 18 55	311
	3·4 4·0	19 14	328
μ Sagittarii ξ Sagittarii	3.6	19 59	328
λ Sagittarii	2:9	20 4	309
γ Sagittarii	3.1	20 9	294
π Sagittarii	3.0	20 II	328
δ Sagittarii	2:8	20 21	296
φ Sagittarii	3.3	20 32	304
σ Sagittarii	2. I	20. 37	306
τ Sagittarii	3.4	20. 57	302
ζ Sagittarii ζ Capricorni	2.7	21 3	295 320
ζ Capricorni	3.9	22 44	320
		_	-
4			
		->	
700			

Star.	Mag.	L.S.T.	Az.
17		h. m.	0
υ ⁴ Eridani	3.6	1 53	73
a Columba	2.7	3 15	74
ε Leporis	3.3	3 51	34
ζ Canis Majoris	3.1	4 14	62
β Leporis	3.0	4 34	25
ε Canis Majoris	1.6	4 58	58
22 Canis Majoris	3.7	5 7	55
δ Canis Majoris	2.0	5 23	50
η Canis Majoris	2.4	5 23	59
o ² Canis Majoris	3.1	5 38	40
ξ Argus	3.2	6 16	44
ρ Argus		6 39	41
$\xi Hydræ$	3.7	9 19	66
ε Corvi	3.5	10 58	33
β Corvi	2.8	11 15	36
γ Hydræ	3.3	I2 2	35
π Hydræ	3.5	12 20	50
γ Scorpii	3.4	13 26	45
π Scorpii	3.0	14 15	49
т Scorpii	2.9	14 39	56
σ Scorpii α Scorpii	3·1	14 40	47
0 0:	1	14 43 14 45	50
θ Ophiuchi		15 45	34
γ Sagittarii	1	15 56	45 63
δ Sagittarii	- 0	16 14	62
λ Sagittarii	2.9	16 47	47
φ Sagittarii	1	16 54	53
ζ Sagittarii	I	16 54	62
σ Sagittarii	I	17 8	51
т Sagittarii	3.4	17 11	55
μ Sagittarii		17 14	26
ξ Sagittarii	3.6	17 57	27
π Sagittarii	1 -	18 9	27
ζ Capricorni		20 8	36
α Piscis Australis	3.8	20 50	62
c² Aquarii	3.8	22 4	29
		1	
]			
]	
1			
I		i	
1		1	
1			
3	1	1	

·			
Star.	Mag.	L.S.T.	Az.
		h. m.	0
α Reticuli	3.4	0 55	136
α Doradus	3.5	1 16	121
β Doradus	3⋅8	2 15	135
α Argus	-0.9	3 10	115
α Pictoris	3.3	3 29	134
δ Volantis	4.0	4 7	146
ε Argus δ Argus	1.7	5 3	129
0	2.0	. 5 27	119
ι Argus κ Argus	2·3 2·6	5 57 6 5	128
β Argus	1.8	6 5	150
N Velorum	3.0	6 12	124
q Carinæ	3.4	6 56	132
θ Argus	3.0	7 23	138
λ Centauri	3.3	8 14	136
δ Crucis	3.1	8 53	127
α Crucis	1 · I	9 4	136
γ Crucis	1.6	9 10	123
β Crucis	1.2	9 25	129
α Muscæ	2.9	9 25	148
β Muscæ	3.3	9 31	146
ε Centauri β Centauri	2.6	10 22	116
α Centauri	0.9	10 40 11 16	130
α Circini	0·3 3·4	II 20	131 140
γ Triang. Aust.	3·1	12 3	147
β Triang. Aust.	3.0	12 31	137
α Triang. Aust.	1.9	13 34	148
ζ Aræ	3·í	13 36	122
β Aræ	2.8	14 2	121
η Pavonis δ Pavonis	3.6	14 22	140
	3.6	16 48	143
α Pavonis	2·I	17 2	124
β Pavonis	3.6	17 25	143
α Tucanæ ε Gruis	2·9 3·7	18 55 19 33	132
β Phænicis	3·1 3·4	22 0	114 104
α Eridani	0.6	22 17	104
α Hydri	3.0	22 38	134
	J -	5	-24
		<u></u>	-
			-

SW. QUADRANT

L.S.T. Az. Star. Mag. h. m. 228 α Tucanæ... 2.9 1 31 3.7 1 55 246 ε Gruis ... 256 4 4 B Phænicis 3.4 α Eridani ... 0.6 234 4 53 α Hydri ... 3.0 226 5 14 α Reticuli... 224 7 31 3.4 α Doradus 7 48 239 3.2 8 51 3.8 β Doradus 225 α Argus ... 9 34 245 -0.9 α Pictoris ... 10 5 226 3.3 ... δ Volantis IO 27 214 4.0 11 39 ε Argus 1.7 231 ••• 24I δ Argus 2.0 11 57 1.8 12 16 210 β Argus ... 232 2.3 12 33 LArgus ... 12 35 2.6 240 x Argus ... 236 12 46 N Velorum 3.0 228 13 32 q Carinæ ... 3.4 222 13 57 θ Argus ... 3.0 λ Centauri 14 50 224 3.3 15 29 233 δ Crucis ... 3.1 15 39 α Muscæ ... 2.9 212 α Crucis ... I·I 15 40 224 1·6 15 44 237 Crucis ... 15 51 16 1 214 β Muscæ ... 3.3 23 I β Crucis ... 1.2 16 48 2.6 244 ε Centauri 17 16 230 0.0 β Centauri 17 52 229 α Centauri 0.3 3.4 17 52 220 α Circini ... Y Triang. Aust. 3.I 18 19 213 19 5 223 β Triang. Aust. 3.0 212 19 46 α Triang. Aust. 1.9 238 20 ζ Aræ 3.1 20 34 239 βAræ 2.8 220 3.6 20 54 n Pavonis... 3.6 217 23 14 Pavonis... 236 2 · I 23 36 α Pavonis... 217 3.6 23 51 B Pavonis...

NW. QUADRANT

•			
Star.	Mag.	L.S.T.	Az.
		h. m.	0
c ² Aquarii	3.8	0 6	331
α Piscis Australis	1.3	0 56	298
ε Leporis	3.3	6 13	326
β Leporis	3.0	6 16	335
υ ⁴ Eridani	3.6	6 37	287 286
α Columbæ	2.7	7 59 8 20	298
ζ Canis Majoris o² Canis Majoris	3.1	8 20	320
8 Canis Majoris	2.0	8 47	310
22 Canis Majoris	3.7	8 49	305
ε Canis Majoris	1.6	8 52	302
ξ Argus	3.2	9 16	316
η Canis Majoris	2.4	9 19	301
ρ Argus	2.9	9 29	319
a Mali	3.7	10 57	290
ε Corvi	3.5	13 14	327
$\xi Hydras$	3.7	13 39	294
β Corvi	2.8	13 45	324
γ Hydræ	3.3	14 26 15 44	325 310
π Hydræ γ Scorpii	3·5	15 44 16 32	315
γ Scorpii δ Scorpii	2.2	17 5	326
π Scorpii	3.0	17 33	311
σ Scorpii	3.1	17 52	313
α Scorpii	1.2	18 5	310
т Scorpii	2.9	18 23	304
θ Ophiuchi	3.4	18 49	315
μ Sagittarii	4.0	19 4	334
ξ Sagittarii	3.6	19 49	333
λ Sagittarii	2.9	19 59	313
π Sagittarii	3.0	20 I 20 6	333 297
γ Sagittarii δ Sagittarii	3·1 2·8	20 18	298
~	3.3	20 28	307
φ Sagittarii σ Sagittarii	2·I	20 32	309
т Sagittarii	3.4	20 53	305
ζ Sagittarii	2.7	21 0	298
ζ Sagittarii ζ Capricorni	3.9	22 36	324
İ			1
			1
-			
. 4.1	_		
		<u> </u>	<u> </u>

Mag. L. S.T. Star. Az. ٥ b. m. υ⁴ Eridani ... 3.6 1 55 71 a Columba 2.7 3 17 72 ε Leporis ... 3.3 4 I 29 4: 18 ζ Canis Majoris 3.1 59 ε Canis Majoris 1.6 5 2 56 22 Canis Majoris 3.7 5 12 52 η Canis Majoris 2.4 5 27 57 δ Canis Majoris 5 28 2.0 47 36 5 46 6 23 o² Canis Majoris 3·1 ξ Argus 3.2 40 37 64 6 46 Argus ... 2.9 ρ Argus ... ξ Hydræ ... 3.7 9 22 ε Corvi ΙI 8 3.5 27 β Corvi 2.8 II 24 32 γ Hydræ ... 12 11 30 3.3 π Hydræ ... 12 25 47 3.2 γ Scorpii ... 3.4 13 33 4I π Scorpii ... 14 21 3.0 45 т Scorpii ... 2.9 14 43 53 σ Scorpii ... 3.1 14 46 43 α Scorpii ... 1.2 14 49 47 δ Scorpii ... 2.2 14 55 29 θ Ophiuchi 15 52 3.4 4 I γ Sagittarii 15 59 16 17 61 3.1 δ Sagittarii 2.8 ••• 59 λ Sagittarii 2.9 16 53 44 ζ Sagittarii 16 57 2.7 59 φ Sagittarii 16 59 3.3 50 σ Sagittarii 17 13 2·I 47 т Sagittarii 17 16 3.4 52 20 μ Sagittarii 4.0 17 28 ξ Sagi!tarii 3.6 18 20 9 3.0 18 21 20 π Sagittarii ζ Capricorni 3.9 20 17 31 α Piscis Australis 20 53 60 1.3 3.8 22 15 24 c2 Aquarii...

, ₀ ,			
Star.	Mag.	L. S.T.	Az.
		h. m.	0
α Reticuli	3.4	0-49	135
α Doradus	3.2	1 13	119
β Doradus	3.8	2 9	134
α Pictoris	3.3	3 23	133
δ Volantis	4.0	3 58	145
ε Argus	1.7	4 58	127
δ Argus	2.0	5 24	118
LArgus	2.3	5 52	127
β Argus	r·8	5 57	148
ж Argus	2.6	6 2	118
N Velorum	3.0	6 8	122
q Carinæ	3.4	6 50	131
θ Argus	3.0	7 16	137
λ Centauri δ Crucis	3.3	8 8	134.
	3.1	8 48	126
α Crucis γ Crucis	1.9	8 58	134
γ Crucis α Muscæ		9 6	122
β Crucis	2.9	9 15	147
β Muscæ	3.3	9 20	127
ε Centauri	2.6	_	145 115
β Centauri	0.9	10 19	129
α Centauri	0.3	11.10	130
α Circini	3.4	11 13	139
γ Triang. Aust.	3·I	11 53	146
β Triang. Aust.	3.0	12 24	135
α Triang. Aust.	1.9	13 23	147
ζ Aræ	3.1	13 32	121
β Агæ	2.8	13 59	120
η Pavonis	3.6	14 15	139
δ Pavonis	3.6	16 40	142
α Pavonis	2.1	16 58	123
β Pavonis	3.6	17 17	142
α Tucanæ	2.9	18 49	131
ε Gruis	3.7	19 30	113
β Phænicis	3.4	21 58	103
α Eridani α Hydri	0.6	22 13	124
a myun	3.0	22 32	133
]			
ļ			
1 - 1			
J			

Star.	Mag.	L. S.T.	Az.
		h. m.	0
α Tucanæ	2.9	I 37	229
ε Gruis	3.7	1 58	247
β Phænicis	3.4	4 6	257
α Eridani	0.6	4 57	236
α Hydri	3.0	5 20	227
α Reticuli	3.4	7 37	225
α Doradus	3.2	7 51	24I
β Doradus	3.8	8 57	226
α Pictoris	3.3	IOII	227
S .TT 1 ('	4.0	.10 36	215
	1.7	11 44	233
ε Argus δ Argus	2.0	12 0	242
0	1.8	12 27	212
β Argus	2.3	12 38	233
	2.6	12 38	242
x Argus N Velorum	3.0	12 50	238
		13 38	229
	3·4 3·0	14 4	223
θ Argus		14 56	226
λ Centauri	3.3		234
δ Crucis	1·1	15 34 15 46	226
α Crucis	1.6	15 48	238
γ Crucis			213
α Muscæ	2.9	15 49 16 0	215
β Muscæ	3.3	16 6	233
β Crucis	2.6	16 51	245
ε Centauri	0.9	17 22	23I
β Centauri	0.3	17 58	230
α Centauri	3.4	17 59	22 I
α Circini	3·I	18 29	214
γ Triang. Aust. β Triang. Aust.	3.0	19 12	225
	1.9	19 57	213
α Triang. Aust. ζ Aræ	3.1	20 I2	239
ζ Aræ β Aræ	2.8	20 37	240
	3.6	2I I	22I
η Pavonis δ Pavonis	3.6	23 22	218
α Pavonis	2·I	23 40	237
β Pavonis	3.6	23 59	218
р тачоны	,	-3 37	
		_	
-	-		
-			
	_		
	-		

Star.	Mag.	L.S.T.	Az.
a Piscis Australis ε Leporis	1·3 3·3 3·6 2·7 3·1 2·0 3·7 3·1 2·0 3·7 3·2 2·8 3·7 3·3 3·6 3·1 2·9 3·4 2·9 3·6 3·9 3·1 2·9 3·6 3·9 3·1 2·9 3·8 3·1 3·4 2·7 3·8	h. m. 0 53 6 35 7 57 8 14 8 16 8 42 8 44 8 48 9 9 15 9 22 10 55 13 36 13 36 14 17 15 39 16 25 16 55 17 46 17 59 18 42 18 50 19 37 19 49 19 53 20 23 20 27 20 48 20 57 22 27 23 55	300 331 289 288 324 301 313 308 304 320 303 323 292 333 313 315 317 313 307 319 340 340 340 316 299 301 310 313 308 301 313 308

Star.	Mag.	L. S.T.	Az.
		h. m.	0
α Reticuli	3.4	0 42	133
α Doradus	3.2	19	118
β Doradus α Pictoris	3.8	2 2	133
δ Volantis	3.3	3 17 3 49	131 143
ε Argus	1.7	4 53	126
δ Argus	2.0	5 20	116
β Argus	1.8	5 47	147
ι Argus	2.3	5 47	126
ж Argus N Velorum	2.6	5 58 6 4	117
q Carinæ	3·4		121
θ Argus	3.0	6 45 7 9	130
λ Centauri	3.3	8 2	133
δ Crucis	3.1	8 44	124
α Crucis	I·I	8 52	133
γ Crucis	1.6	9 2	121
α Muscæ β Muscæ	2.9	9 5	145
β Crucis	3.3	9 13	143
β Centauri	0.9	9 15 10 29	128
α Centauri	0.3	11 5	129
α Circini	3.4	11 6	137
γ Triang. Aust.	3.1	II 43	145
β Triang. Aust.	3.0	.12 17	134
α Triang. Aust.	1.9	13 13	146
ζ Aræ β Aræ	3·I 2·8	13 28	119
η Pavonis	3.6	13 55 14 8	119
δ Pavonis	3.6	16 31	141
α Pavonis	2·I	16 53	122
β Pavonis	3.6	17 8	141
α Tucanæ	2.9	18 44	129
ε Gruis α Eridani	3.7	19 28	111
α Hydri	0.6	22 8	123
u liyali	3.0	22 20	132
-			
		,	

_			
Star.	Mag.	L.S.T.	Az.
β Pavonis α Tucanæ ε Gruis α Eridani α Hydri α Reticuli α Doradus β Doradus α Pictoris δ Volantis	3.6 2.9 3.7 0.6 3.0 3.4 3.5 3.8 3.3	h. m. 0 8 1 42 2 0 5 2 5 26 7 44 7 55 9 4 10 17 10 45	Az. 0 219 231 249 237 228 227 242 227 242 227 229 217 234
Argus Argus Argus Argus Argus Argus Velorum Carinæ Centauri Crucis Crucis Crucis Crucis Crucis Crucis Crucis Crucis Crucis Crucis Crucis	1.7 2.0 1.8 2.6 2.3 3.0 3.4 3.0 3.3 3.1 1.1	11 49 12 4 12 37 12 42 12 43 12 54 13 43 14 11 15 2 15 38 15 52 15 52	234 244 213 243 234 239 230 224 227 236 227 239
Muscæ Muscæ Muscæ Crucis Centauri Centauri Circini Triang. Aust. Triang. Aust. Triang. Aust. Aræ Aræ	2·9 3·3 1·5 0·9 0·3 3·4 3·1 3·0 1·9 3·1	15 59 16 9 16 11 17 27 18 3 18 6 18 39 19 19 20 7 20 16	315 217 234 232 231 223 215 226 214 241
β Aræ η Pavonis δ Pavonis α Pavonis	2·8 3·6 3·6 2·1	20 41 21 8 23 31 23 45	24I 223 219 238
			=

Star.	Mag.	L.S.T.	Az.
Star. α Piscis Australis ε Leporis	Mag. 1.3 3.3 3.6 2.7 3.1 2.0 3.7 1.6 3.5 2.4 2.9 3.7 3.2 2.8 3.7 3.4 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.9	L. S.T. h. m. 0 49 5 51 6 32 7 55 8 4 8 12 8 35 8 39 8 43 9 0 9 11 9 13 10 52 12 50 13 25 13 33 14 6 15 32 16 17 16 42 17 20 17 38 17 53 18 14 18 34 19 46 19 59 20 11 20 17 20 21 20 43 20 53 22 15	Az. 303 337 291 291 329 303 317 311 307 325 306 327 294 339 334 299 335 317 323 338 319 321 310 323 302 304 314 317 311 303 335
-			

Star.	Mag.	L.S.T.	Λz.
of Eridani α Columbæ ζ Canis Majoris ε Canis Majoris γ Canis Majoris δ Canis Majoris δ Canis Majoris α Mali ξ Argus ρ Argus ξ Hydræ θ Centauri β Corvi π Hydræ γ Scorpii π Scorpii τ Scorpii α Scorpii σ Scorpii γ Sagittarii δ Sagittarii δ Sagittarii γ Sagittarii τ Sagittarii τ Sagittarii τ Sagittarii τ Sagittarii τ Sagittarii τ Sagittarii σ Sagittarii	3.6 2.7 3.1 3.7 3.7 3.2 3.3 2.8 3.9 3.9 3.1 3.9 3.1 3.9 3.1 3.9 3.1 3.9 3.1 3.9 3.1 3.9 3.1 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9 3.9	h. m. 2 1 3 22 4 26 5 12 5 23 5 36 5 43 6 32 6 42 7 6 9 29 11 37 11 51 12 40 13 51 14 29 14 36 14 54 15 3 16 7 16 10 16 26 17 9 17 12 17 27 21 1	66 67 54 49 46 50 39 24 63 30 27 58 72 18 39 36 7 37 46 38 55 32 43 55 35 45 36 57 37 46 37 46 37 46 37 46 47 47 47 47 47 47 47 47 47 47 47 47 47
			1
. •			

Star.	Mag.	L. S.T.	Az.
Reticula α Doradus β Doradus α Pictoris δ Volantis ε Argus β Argus γ Argus γ Argus α Carinæ α Crucis α Crucis α Crucis β Centauri α Circini α Circini α Centauri γ Triang. Aust. β Triang. Aust. α Triang. Aust. α Triang. Aust. α Aræ γ Pavonis β Pavonis α Pavonis α Pavonis α Tucanæ ε Gruis α Eridani α Hydri α Hydri α Hydri α Hydri α Hydri	3.4 3.5 3.8 3.3 4.0 1.7 2.6 3.3 2.6 3.3 1.1 2.9 3.3 3.1 2.9 3.3 3.1 2.9 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6 3.6	h. m. 0 36 1 56 3 11 3 40 4 48 5 17 5 37 5 43 5 55 6 39 7 56 8 39 8 46 8 58 9 10 10 59 11 34 12 11 13 4 13 24 13 16 49 17 0 18 39 19 26 22 4 22 20	132 117 132 130 142 125 115 145 124 116 120 128 135 132 144 120 142 125 127 136 128 143 133 145 143 133 145 149 120 128 149 120 128 137 130 142 144 120 142 125 127 136 147 147 147 147 147 147 147 147 147 147

NW. QUADRANT

Star.	Mag.	L.S.T.	Az.
a Piscis Australis v ⁴ Eridani	1·3 3·6 2·7 3·1 2·0 3·7 1·6 3·5 2·9 2·4 3·7 2·9 3·4 2·9 3·4 2·9 3·4 2·7 3·4 2·7	h m. 0 45 6 29 7 52 8 8 8 27 8 33 8 38 8 50 9 6 48 73 9 13 29 15 24 16 7 17 12 17 29 17 45 18 8 18 24 19 1 19 37 19 55 20 6 20 10 20 13 20 37 20 48	306 294 293 336 306 321 314 311 330 333 310 297 342 302 321 328 288 323 326 322 314 328 293 325 305 307 318 321 314 306

NE. QUADRANT SE. QUADRANT

Star.	Mag.	L. S.T.	Az.	Star.	Mag.	L. S.T.	Az.
υ ⁴ Eridani α Columbæ ζ Canis Majoris ε Canis Majoris	3·6 2·7 3·1 1·6	h. m. 2 4 3 25 4 31 5 18	64 64 50 46	γ Hydri α Reticuli α Doradus β Doradus	3.4	h. m. 0 17 0 31 1 3 1 51	155 131 115 130
22 Canis Majoris 7 Canis Majoris 8 Canis Majoris a Mali \$ Argus \$ Argus	2.5	5 30 5 42 5 52 6 35 6 54 7 20	42 47 34 60 24 20	α Pictoris δ Volantis ε Argus β Argus ι Argus κ Argus	1·7 1·8	3 6 3 3 ² 4 44 5 28 5 38 5 52	129 141 124 144 123 114
ξ Hydræ θ Centauri π Hydræ γ Scorpii ε Scorpii π Scorpii	3·7 2·3 3·5 3·4 2·4	9 34 11 39 12 49 14 2 14 33 14 46	55 70 34 27 64 32	N Velorum q Carinæ θ Argus λ Centauri δ Crucis α Crucis	3·0 3·4 3·0 3·3 3·1	5 57 6 34 6 57 7 50 8 35 8 40	119 127 134 131 122 131
τ Scorpii α Scorpii σ Scorpii ε Sagittarii γ Sagittarii θ Ophiuchi	3·1 2·0 3·1 3·4	15 1 15 12 15 14 16 5 16 12 16 21	42 33 29 65 52 26	α Muscæ γ Crucis β Muscæ β Crucis β Centauri α Circini	1.6 3.3 1.5 0.9 3.4	8 48 8 55 8 56 9 6 10 20	143 118 141 124 125 135
δ Sagittarii ζ Sagittarii λ Sagittarii φ Sagittarii τ Sagittarii σ Sagittarii	2·7 2·9 3·3 3·4 2·1	16 31 17 11 17 19 17 20 17 34 17 36	50 50 30 38 42 35	α Centauri γ Triang. Aust. β Triang. Aust. α Triang. Aust. ζ Aræ β Aræ	3·I 3·0 I·9 3·I 2·8	10 55 11 26 12 5 12 56 13 21 13 48	126 142 132 144 117 116
α Piscis Australis	3 1.3	21 6	51	η Pavonis δ Pavonis α Pavonis β Pavonis α Tucanæ ε Gruis	3.6 2.1 3.6 2.9	13 54 16 16 16 46 16 53 18 34 19 24	135 138 119 138 127 109
				α Eridani α Hydri	o·6 3·0	22 I 22 I <u>5</u>	121
							Ų.
			<u> </u>		1	<u> </u>	

Star.	Mag.	L. S.T.	Az.
		h. m.	0
β Pavonis	3.6	0 23	222
α Tucanæ	2.9	I 52	233
ε Gruis	3.7	2 4	251
α Eridani	0.6	5 9	239
α Hydri	3.0	5 37	231
γ Hydri	3.2	7 21	205
α Reticuli	3.4	7 55 8 I	229
α Doradus	3.2		245
β Doradus	3.8	9 15 10 28	230
α Pictoris	3.3	IO 28	231
δ Volantis	4.0	11 58	219 236
ε Argus x Argus	2.6	12 48	246
ι Argus	2.3	12 52	237
β Argus	1.8	12 56	216
N Velorum	3.0	13 1	24 I
q Carinæ	3.4	13 54	233
0 Argus	3.0	14 23	226
λ Centauri	3.3	15 14	229
δ Crucis	3.1	15 47	238
γ Crucis	1.6	15 59	242
α Crucis	1.1	16 4	229
α Muscæ	2.9	16 16	217
β Crucis	1.2	16 20	236
β Musca	3.3	16 26	219
β Centauri	0.9	17 36 18 13	235
α Centauri	0.3	18 13	234 225
α Circini γ Triang. Aust.	3·4 3·1	18 56	218
γ Triang. Aust. β Triang. Aust.	3.0	19 31	228
β Triang. Aust. ζ Aræ	3.1	20 23	243
α Triang. Aust.	1.9	20 24	216
α Triang. Aust. β Aræ	2.8	20 48	244
	3.6	21 22	225
η Pavonis δ Pavonis	3.6	23 46	222
α Pavonis	2·1	23 52	24I
		·	
		İ	
		ψ,	ļ
=;			
			İ
Ē			
	<u> </u>	i	

Star.	Mag.	L. S.T.	Az.
	<u> </u>	h. m.	0
α Piscis Australis	1.3	0 40	309
υ ⁴ Eridani	3.6	6 26	296
α Columbæ	2.7	7 49	296
ζ Canis Majoris	3.1	8 3	310
δ Canis Majoris	2.0	8 18	326
22 Canis Majoris	3·7 1·6	8 26 8 32	318
E Canis Majoris	3·5	8 32 8 38	314 336
ξ Argus ρ Argus	2.9	8 48	340
n Canis Majoris	2.4	9 0	313
a Mali	3.7	10 45	300
ξ Hydræ	3.7	13 24	305
π Hydræ	3.2	15 15	326
γ Scorpii	3.4	15 56	333
θ Centauri	2.3	16 25	290
π Scorpii	3.0	. 17 2	328
σ Scorpii	3.I	17 18	331
α Scorpii	1.2	17 36 18 1	327 318
τ Scorpii	2.9	18 I 18 I3	334
θ Ophiuchi ε Scorpii	3:4 2·4	18 57	296
λ Sagittarii	2.9	19 27	330
~ ~	3.1	19 50	308
γ Sagittarii δ Sagittarii	2.8	20 I	310
φ Sagittarii	3.3	20 2	322
σ Sagittarii	2.1	20 4	325
τ Sagittarii	3.4	20 30	318
ε Sagittarii	2.0	20 33	295
ζ Sagittarii	2.7	20 43	310
			1
	}		
			l
	l		
•			
	ļ		
•	j		
			l=
		,	
	1		

NE. QUADRANT SE. QUADRANT

Star.	Mag.	L. S.T.	Az.
Columbæ β Columbæ ζ Canis Majoris ε Canis Majoris ε Canis Majoris γ Canis Majoris δ Canis Majoris δ Canis Majoris δ Canis Majoris α Mali Κ Hydræ Κ Ηγdræ Κ Εσοτρίι κ Scorpii κ Scorpii κ Scorpii κ Scorpii κ Sagittarii γ Sagittarii	3.4	h. m. 2 7 3 29 3 29 4 37 5 25 5 38 5 49 6 39 9 39 11 42 13 0 14 17 14 36 14 57 15 9 16 37 16 37 17 17 29 17 32 17 42 17 46 21 12	61 61 67 47 42 37 43 29 57 52 67 29 62 26 38 28 23 62 48 47 18 47 33 24 37 30 47
	•		

Star. Mag. L.S.T. Az. γ Hydri 3·2 0 3 153 α Reticuli 3·4 0 25 130 α Doradus 3·5 I 0 114 β Doradus 3·8 I 46 129 α Pictoris 3·3 I 128 δ Volantis 4·0 3 24 140 ε Argus 1·7 4 40 122 β Argus 1·8 5 19 143 ι Argus 3·0 6 51 132 N Velorum 3·0 5 53 117 q Carinæ 3·3 7 45 129 δ Crucis 3·1 8 31 121 22 126 6 51 132 126 6 51 132 126 6 51 132 126 6 51 132 126 6 51 132 126 6 51 132 126 6 51 132 129 8 39 142				
γ Hydri 3·2 0 3 153 α Doradus 3·4 0 25 130 α Doradus 3·8 1 46 129 α Pictoris 3·8 1 46 129 α Pictoris 3·3 3 1 128 δ Volantis 4·0 3 24 140 ε Argus 1·7 4 40 122 β Argus 1·8 5 19 143 ι Argus 3·0 5 53 117 q Carinæ 3·4 6 29 126 θ Argus 3·0 6 51 132 λ Centauri 3·3 7 45 122 δ Crucis 3·1 8 31 121 α Crucis 1·1 8 35 129 α Muscæ 3·3 8 49 140 <t< td=""><td>Star.</td><td>Mag.</td><td>L. S.T.</td><td>Az.</td></t<>	Star.	Mag.	L. S.T.	Az.
	A Reticuli A Doradus B Doradus Volantis Argus Argus Argus Velorum Carinæ Crucis Crucis Muscæ Crucis Crucis Crucis Triang. Aust. Triang. Aust. Aræ Pavonis Pavonis Pavonis Pavonis Pavonis Pavonis Pavonis A Tucanæ Gruis Crucis Aræ Pavonis Aræ Pavonis Aræ Pavonis Aræ Pavonis Crucis Aræ Pavonis Aræ Pavonis Aræ Pavonis Aræ Pavonis Aræ Pavonis Aræ Aræ Pavonis Aræ	3.4 3.5 3.8 3.0 3.3 3.1 3.0 3.3 3.1 3.0 3.3 3.1 3.0 3.3 3.1 3.0 3.0 3.0 3.0 3.0 3.0 3.0 3.0	0 3 0 25 1 46 3 1 46 3 24 4 40 5 34 5 53 6 51 7 8 31 8 35 9 8 49 8 5 2 10 15 10 46 10 59 11 18 13 45 16 46 16 46 18 29 21 57	153 130 114 129 128 140 122 143 122 117 126 132 129 142 140 117 122 140 117 122 141 131 142 115 131 142 116 115 137 118 137 119
q Carinæ 3·4 6 29 126 θ Argus 3·0 6 51 132 λ Centauri 3·3 7 45 129 δ Crucis 1·1 8 35 121 α Crucis 1·1 8 35 129 α Muscæ 2·9 8 39 142 β Muscæ 1·6 8 52 117 β Crucis 1·6 8 52 117 β Crucis 1·5 9 2 122 β Centauri 0·9 10 15 124 α Circini 3·4 10 46 134 α Centauri 0·3 10 50 125 γ Triang. Aust. 3·1 11 18 141 β Triang. Aust. 1·9 12 47 142 ζ Aræ 3·1 13 18 116 β Aræ 2·8 13-45 115 η Pavonis 3·6 13 48 134	ι Argus	2.3	5 34	122
N Velorum 3.0 5 53 117 q Carinæ 3.4 6 29 126 θ Argus 3.0 6 51 132 λ Centauri 3.3 7 45 129 δ Crucis 1.1 8 35 121 α Crucis 1.1 8 35 129 α Muscæ 2.9 8 39 142 β Muscæ 1.6 8 52 117 β Crucis 1.6 8 52 117 β Crucis 1.5 9 2 122 β Centauri 0.9 10 15 124 α Circini 3.4 10 46 134 α Centauri 0.3 10 50 125 γ Triang. Aust. 3.1 11 18 141 β Triang. Aust. 3.0 11 59 131 α Triang. Aust. 1.9 12 47 142 ζ Aræ 3.1 13 18 116 β Aræ 3.6 13 48 134 δ Pavonis 3.6 16 9 137 α Pavonis 3.6 16 42 118 β Pavonis 3.6 16 42 118 β Pavonis 3.6 16 46 137 α Tucanæ 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119	β Argus	1.8	5 19	
q Carinæ 3·4 6 29 126 θ Argus 3·0 6 51 132 λ Centauri 3·3 7 45 129 δ Crucis 1·1 8 35 121 α Crucis 1·1 8 35 129 α Muscæ 2·9 8 39 142 β Muscæ 1·6 8 52 117 β Crucis 1·6 8 52 117 β Crucis 1·5 9 2 122 β Centauri 0·9 10 15 124 α Circini 3·4 10 46 134 α Centauri 0·3 10 50 125 γ Triang. Aust. 3·1 11 18 141 β Triang. Aust. 1·9 12 47 142 ζ Aræ 3·1 13 18 116 β Aræ 2·8 13-45 115 η Pavonis 3·6 13 48 134	ι Argus			
θ Argus 3·0 6 51 132 λ Centauri 3·3 7 45 129 δ Crucis 1·1 8 35 121 α Crucis 1·1 8 35 129 α Muscæ 2·9 8 39 142 β Muscæ 3·3 8 49 140 γ Crucis 1·6 8 52 117 β Crucis 1·5 9 2 122 β Centauri 0·9 10 15 124 α Circini 3·4 10 46 134 α Centauri 0·3 10 50 125 γ Triang. Aust. 3·1 11 18 141 β Triang. Aust. 1·9 12 47 142 ζ Aræ 3·1 13 18 116 β Aræ 2·8 13-45 115 η Pavonis 3·6 13 48 134 δ Pavonis 3·6 16 42			5 53	
λ Centauri 3·3 7 45 129 δ Crucis 1·1 8 35 121 α Crucis 1·1 8 35 129 α Muscæ 2·9 8 39 142 β Muscæ 3·3 8 49 140 γ Crucis 1·6 8 52 117 β Crucis 1·5 9 2 122 β Centauri 0·9 10 15 124 α Circini 3·4 10 46 134 α Centauri 0·3 10 50 125 γ Triang. Aust. 3·1 11 18 141 β Triang. Aust. 1·9 12 47 142 ζ Aræ 3·1 13 18 116 β Aræ 2·8 13-45 115 η Pavonis 3·6 13 48 134 δ Pavonis 3·6 16 42 118 β Pavonis 3·6 <td< td=""><td>. .</td><td></td><td></td><td></td></td<>	. .			
δ Crucis 3·1 8 31 121 α Crucis 1·1 8 35 129 α Muscæ 2·9 8 39 142 β Muscæ 3·3 8 49 140 γ Crucis 1·6 8 52 117 β Crucis 1·5 9 2 122 β Centauri 0·9 10 15 124 α Circini 3·4 10 46 134 α Centauri 0·3 10 50 125 γ Triang. Aust. 3·1 11 18 141 β Triang. Aust. 1·9 12 47 142 ζ Aræ 3·1 13 18 116 β Aræ 2·8 13-45 115 η Pavonis 3·6 13 48 134 δ Pavonis 3·6 16 42 118 β Pavonis 2·1 16 42 118 β Pavonis 3·6 16 46 137 α Tucanæ 2·9 18 29 <td>O .</td> <td>3.0</td> <td>6 51</td> <td></td>	O .	3.0	6 51	
α Crucis 1·1 8 35 129 α Muscæ 2·9 8 39 142 β Muscæ 3·3 8 49 140 γ Crucis 1·6 8 52 117 β Crucis 1·5 9 2 122 β Centauri 0·9 10 15 124 α Circini 3·4 10 46 134 α Centauri 0·3 10 50 125 γ Triang. Aust. 3·1 11 18 141 β Triang. Aust. 1·9 12 47 142 ζ Aræ 3·1 13 18 116 β Aræ 2·8 13-45 115 η Pavonis 3·6 16 42 137 α Pavonis 2·1 16 42 118 β Pavonis 2·2 16 42 118 β Pavonis 2·9 18 29 126 ε Gruis 3·7 19 22 107 α Eridani 0·6 <td></td> <td>3.3</td> <td></td> <td>129</td>		3.3		129
α Muscæ 2·9 8 39 142 β Muscæ 3·3 8 49 140 γ Crucis 1·6 8 52 117 β Crucis 1·5 9 2 122 β Centauri 0·9 10 15 124 α Circini 3·4 10 46 134 α Centauri 0·3 10 50 125 γ Triang. Aust. 3·1 11 18 141 β Triang. Aust. 1·9 12 47 142 ζ Aræ 3·1 13 18 116 β Aræ 2·8 13-45 115 η Pavonis 3·6 13 48 134 δ Pavonis 3·6 16 42 118 β Pavonis 2·1 16 42 118 β Pavonis 3·6 16 46 137 α Tucanæ 2·9 18 29 126 ε Gruis 3·7 19 22 107 α Eridani 0·6 21 57<		3.1		1
β Muscæ 3·3 8 49 140 γ Crucis 1·6 8 52 117 β Crucis 1·5 9 2 122 β Centauri 0·9 10 15 124 α Circini 3·4 10 46 134 α Centauri 0·3 10 50 125 γ Triang. Aust. 3·1 11 18 141 β Triang. Aust. 1·9 12 47 142 ζ Aræ 3·1 13 18 116 β Aræ 2·8 13-45 115 η Pavonis 3·6 13 48 134 δ Pavonis 3·6 16 42 118 β Pavonis 2·1 16 42 118 β Pavonis 3·6 16 46 137 α Tucanæ 2·9 18 29 126 ε Gruis 3·7 19 22 107 α Eridani 0·6 21 57 119		1.1		129
β Muscæ 3·3 8 49 140 γ Crucis 1·6 8 52 117 β Crucis 1·5 9 2 122 β Centauri 0·9 10 15 124 α Circini 3·4 10 46 134 α Centauri 0·3 10 50 125 γ Triang. Aust. 3·1 11 18 141 β Triang. Aust. 1·9 12 47 142 ζ Aræ 3·1 13 18 116 β Aræ 2·8 13-45 115 η Pavonis 3·6 16 9 137 α Pavonis 3·6 16 42 118 β Pavonis 3·6 16 46 137 α Tucanæ 2·9 18 29 126 ε Gruis 3·7 19 22 107 α Eridani 0·6 21 57 119		2.9	8 39	142
β Crucis 1.5 9 2 122 β Centauri 0.9 10 15 124 α Circini 3.4 10 46 134 α Centauri 0.3 10 50 125 γ Triang. Aust. 3.1 11 18 141 β Triang. Aust. 1.9 12 47 142 ζ Aræ 3.1 13 18 116 β Aræ 2.8 13-45 115 η Pavonis 3.6 13 48 134 δ Pavonis 2.1 16 42 118 β Pavonis 3.6 16 46 137 α Tucanæ 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119	β Muscæ	3.3	8 49	140
β Crucis 1.5 9 2 122 β Centauri 0.9 10 15 124 α Circini 3.4 10 46 134 α Centauri 0.3 10 50 125 γ Triang. Aust. 3.0 11 18 141 β Triang. Aust. 1.9 12 47 142 ζ Aræ 3.1 13 18 116 β Aræ 2.8 13-45 115 η Pavonis 3.6 16 9 137 α Pavonis 3.6 16 42 118 β Pavonis 2.1 16 42 118 β Pavonis 3.6 16 46 137 α Tucanæ 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119	~ .	1.6		
β Centauri 0.9 10 15 124 α Circini 3.4 10 46 134 α Centauri 0.3 10 50 125 γ Triang. Aust. 3.1 11 18 141 β Triang. Aust. 3.0 11 59 131 α Triang. Aust. 1.9 12 47 142 ζ Aræ 3.1 13 18 116 β Aræ 2.8 13-45 115 η Pavonis 3.6 16 9 137 α Pavonis 3.6 16 42 118 β Pavonis 2.1 16 42 118 β Pavonis 3.6 16 46 137 α Tucanæ 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119	β Crucis	1.5		
α Circini 3.4 10 46 134 α Centauri 0.3 10 50 125 γ Triang. Aust. 3.1 11 18 141 β Triang. Aust. 3.0 11 59 131 α Triang. Aust. 1.9 12 47 142 ζ Ατæ 3.1 13 18 116 β Ατæ 2.8 13-45 115 η Pavonis 3.6 13 48 134 δ Pavonis 3.6 16 9 137 α Pavonis 2.1 16 42 118 β Pavonis 3.6 16 46 137 α Tucanæ 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119				124
α Centauri 0·3 10 50 125 γ Triang. Aust. 3·1 11 18 141 β Triang. Aust. 3·0 11 59 131 α Triang. Aust. 1·9 12 47 142 ζ Aræ 3·1 13 18 116 β Aræ 2·8 13-45 115 η Pavonis 3·6 13 48 134 δ Pavonis 3·6 16 9 137 α Pavonis 2·1 16 42 118 β Pavonis 3·6 16 46 137 α Tucanæ 2·9 18 29 126 ε Gruis 3·7 19 22 107 α Eridani 0·6 21 57 119			10 46	
γ Triang. Aust. 3.1 11 18 141 β Triang. Aust. 3.0 11 59 131 α Triang. Aust. 1.9 12 47 142 ζ Aræ 3.1 13 18 116 β Aræ 2.8 13-45 115 η Pavonis 3.6 13 48 134 δ Pavonis 3.6 16 9 137 α Pavonis 2.1 16 42 118 β Pavonis 3.6 16 46 137 α Tucanæ 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119				
β Triang. Aust. 3.0 11 59 131 α Triang. Aust. 1.9 12 47 142 ζ Aræ 3.1 13 18 116 β Aræ 2.8 13.45 115 η Pavonis 3.6 13 48 134 δ Pavonis 3.6 16 9 137 α Pavonis 2.1 16 42 118 β Pavonis 3.6 16 46 137 α Tucanæ 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119				
α Triang. Aust. 1.9 12 47 142 ζ Aræ 3.1 13 18 116 β Aræ 2.8 13.45 115 η Pavonis 3.6 13 48 134 δ Pavonis 3.6 16 9 137 α Pavonis 2.1 16 42 118 β Pavonis 3.6 16 46 137 α Tucanæ 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119				
ζ Aræ 3·1 13 18 116 β Aræ 2·8 13-45 115 η Pavonis 3·6 13 48 134 δ Pavonis 3·6 16 9 137 α Pavonis 2·1 16 42 118 β Pavonis 3·6 16 46 137 α Tucanæ 2·9 18 29 126 ε Gruis 3·7 19 22 107 α Eridani 0·6 21 57 119	α Triang. Aust.			
β Aræ 2.8 13.45 115 η Pavonis 3.6 13.48 134 δ Pavonis 3.6 16.9 137 α Pavonis 2.1 16.42 118 β Pavonis 3.6 16.46 137 α Tucanæ 2.9 18.29 126 ε Gruis 3.7 19.22 107 α Eridani 0.6 21.57 119	ζ Aræ		1 /	116
η Pavonis 3.6 13 48 134 8 Pavonis 3.6 16 9 137 α Pavonis 2.1 16 42 118 β Pavonis 3.6 16 46 137 α Tucanæ 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119	ß Aræ			
8 Pavonis 3.6 16 9 137 α Pavonis 2.1 16 42 118 β Pavonis 3.6 16 46 137 α Tucanæ 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119				
α Pavonis 2·1 16 42 118 β Pavonis 3·6 16 46 137 α Tucanæ 2·9 18 29 126 ε Gruis 3·7 19 22 107 α Eridani 0·6 21 57 119	2 Payonia			
β Pavonis 3.6 16 46 137 α Tucanæ 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119				
α Tucano 2.9 18 29 126 ε Gruis 3.7 19 22 107 α Eridani 0.6 21 57 119			16 46	
ε Gruis 3-7 19 22 107 α Eridani 0-6 21 57 119	· <u> </u>	_		
α Eridani 0.6 21 57 119		3.7		
			1	
a Hydri 3.0 22 10 128		1		
	α riyari	3.0	22 10	120
	7	1		•
		-		İ
		į		ļ
		1		1
		1		ĺ
		1		
		1	X	
				}
				1
		1	1	ŀ

SW. QUADRANT

Star.	Mag.	L.S.T.	Az.
β Pavonis α Tucanæ ε Gruis α Eridani α Hydri α Reticuli α Doradus β Doradus β Doradus α Pictoris δ Volantis ε Argus γ Argus γ Crucis γ Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Crucis α Triang. Aust. β Aræ α Triang. Aust. β Aræ α Pavonis β Pavonis α Pavonis	3.6 2.9 3.7 3.6 3.2 3.4 3.8 3.3 4.0 3.3 3.4 3.6 3.3 3.6 3.7 3.7 3.7 3.7 3.7 3.7 3.7 3.7	h. m. 0 30 1 57 2 6 5 13 5 42 7 35 8 1 8 4 9 20 10 33 11 10 12 2 12 56 13 59 14 29 15 19 16 24 16 25 16 33 17 41 18 18 18 26 19 37 20 26 20 33 20 51 21 28 23 53 23 56	223 234 253 241 232 207 230 246 231 232 220 238 238 217 243 228 231 239 243 231 238 217 243 228 231 239 243 231 238 218 220 236 235 226 235 226 235 226 236 237 247 248 248 248 248 248 248 258 268 278 278 278 278 278 278 278 278 278 27
		0. F	

NW. QUADRANT

Star.	Mag.	L. S.T.	Az.
α Piscis Australis υ¹ Eridani	1.3 3.6 2.7 3.1 2.2 3.7 3.5 4 3.7 3.3 2.3 3.1 2.9 3.1 2.9 3.1 2.9 3.1 2.7	h. m. 0 34 6 23 7 45 7 57 8 7 8 18 8 25 8 53 10 41 13 19 15 41 16 22 16 51 17 5 17 53 17 57 18 54 19 14 19 53 19 54 19 55 20 29 20 37	313 299 299 313 331 293 323 318 317 303 308 331 293 334 293 337 332 342 298 336 312 327 332 323 323 323 323 323 323 323 32

LATITUDE 55° SOUTH.

NE. QUADRANT

	TANI	
Star. Ma	g. L.S.T.	Az.
u ⁴ Eridani 3 3 2 2 2 3 2 3 2 2 3 2 2 3 2 3	2 3 32 7 3 33 1 4 44 6 5 33 7 5 48 7 6 17 7 6 43 7 9 44 13 14 40 15 19 2 15 38 0 16 12 16 24 17 17 40 17 17 40 17 18 1	59 64 59 43 38 32 39 22 55 49 65 22 43 43 28 44

SE. QUADRANT

Star.	Mag.	L.S.T.	Az.
α Reticuli α Doradus β Doradus α Pictoris δ Volantis ε Argus β Argus ι Argus ν Velorum q Carinæ θ Argus α Crucis α Crucis α Crucis β Crucis γ Crucis γ Crucis α Crucis α Triang. Aust. β Triang. Aust. β Triang. Aust. α Triang. Aust. α Triang. Aust. α Triang η Pavonis α Pavonis α Pavonis α Pavonis α Tucanæ ε Gruis α Eridani α Hydri γ Hydri	3.45.8 3.60 1.78 2.30 3.40 3.11 2.93.66 1.50 3.10 3.10 3.10 3.10 3.10 3.10 3.10 3.1	h. m. 0 19 0 56 1 40 2 555 3 16 4 35 5 10 5 30 5 49 6 44 7 39 8 27 8 29 8 30 8 41 8 48 8 57 10 10 10 39 11 53 12 38 13 15 13 41 16 2 16 39 18 24 19 20 21 53 22 4 23 49	129 113 128 127 139 121 142 121 116 125 131 128 141 139 116 121 123 133 124 140 130 141 115 133 136 117 136 125 137 138 127 152
			İ
	!	1	

NW. QUADRANT SW. QUADRANT

Star.	Mag.	L.S.T.	A7		Star.	Mag.	L. S.T.	Az.
	•	h. m.	0			<u>. </u>	h. m.	0
δ Pavonis	3.6	0 0	224		α Piscis Australis	1.3	0 27	316
β Pavonis	3.6	0 37	224		υ ⁴ Eridani	3.6	6 19	301
α Tucanæ	2.9	2 2	235	1	α Columbæ	2.7	7 41	301
ε Gruis	3.7	2 8	255		ζ Canis Majoris δ Canis Majoris	3·1 2·0	7 50 7 53	317 338
α Eridani α Hydri	3.0	5 17 5 48	233		β Columbæ	3.2	8 4	296
α Hydri γ Hydri	3.5	7 49	208		22 Canis Majoris	3.7	8 8	328
α Reticuli	3.4	8 7	231		ε Canis Majoris	1.6	8 17	322
β Doradus	3.8	9 26	232		η Canis Majoris	2.4	8 45	321
α Pictoris	3.3	10 39	233		a Mali E Hydræ	3·7 3·7	10 37	305
δ Volantis ε Argus	4.0	11 18	221		π Hydræ	3.5	14 50	338
ε Argus	2.3	13 0	239		θ Centauri	2.3	16 18	295
n Velorum	1 0.0	13 9	244		π Scorpii	3.0	16 34	342
β Argus	1.8	13 14	218		α Scorpii	1.2	17 10	339
q Carinæ		14 4	235		τ Scorpii ε Scorpii	2.4	17 43 18 50	327 301
θ Argus λ Centauri	3.0	14 36	229		ε Scorpii γ Sagittarii	3.1	19 38	315
δ Crucis	3.3	15 55	240		σ Sagittarii	2.1	19 39	338
γ Crucis	1.6	16 6	244		ာ့ Sagittarii	3.3	19 42	332
α Crucis	1.1	16 15	232		δ Sagittarii	2.8	19 48	317
β Crucis	1.2	16 29	239		τ Sagittarii ε Sagittarii	3·4 2·0	20 12	328 300
α Muscæ	2.9	16 34	219	Ì	ζ Sagittarii	2.7	20 30	317
β Muscæ β Centauri	3.3	17 46	237		3	'		
α Centauri	0.3	18 23	236		- 1			
α Circini	3.4	18 33	227		9.0			
γ Triang. Aust.	3.1	19 13	220					
β Triang. Aust.	3.0	19 43	230					
α Aræ α Triang. Aust.	3.1	20 42	219	,				
η Pavonis	3.6	21 35	227			_		
α Pavonis	2·I	23 59	243	X	P+4	İ		
					-			
		}			9	i		
					2 = 1			
					, t			
1								
•					-			
1								
							-	

i. Barometer in Inches. Thermometer Fahrenheit.

 $33'' \cdot 6 + 1 \cdot 12$ (B-30) - 0 · 067 (t-50).

Ther.						BAR	OME'	rer,	INCI	HES.					
° F.	24.0	24.5	25.0	25.5	26.0	26.5	27.0	27.5	28-0	28.5	29.0	29.5	30.0	30.5	31.0
						. "	-"		"	"			-,,		
20	28.9	29.5	30.0	30.6	31.1	31.7	32.2	32.8	33.4	34.0			35.6	36.2	
30	28.2	28.8	29.3	29.9			31.5	32.1	32.7	33.3	33.8	34.3	34.9	35.2	36.0
40	27.6	28.2	28.7			30.4	30.9			32.7	33.2		34.3	34.9	35.4
50	26.9	27.5	28.0	28.6				30.8	31.4	32.0	32.5		33.6	34.2	34.7
60	26.2	26.8				29.0	29.5			31.3	31.8	32.3	32.9	33.2	34.0
70	25.6	26.2	26.7	27.3	27.8	28.4		29.5		, ,	31.2	31.7	32.3	32.9	33.4
80	24.9	25.5	26.0	26-6									31.6	32.2	32.7
90	24.2	24.8			26.4	27.0	27.5			29.3				31.2	32.0
100	23.5	24.1	24.6	25.2			26.8			28.6			30.2	30.8	31.3
110	22.9	23.5	24.0	24.6	25.1	25.7	26.2	26.8	27.4	28.0	28.5	29.0	29.6	30.2	30.7
	1		ł		1										

II. Barometer in Millimetres. Thermometer Centigrade.

33"·6+0·044 (B-762)-0·121 (t-10).

Ther.	1-67				BA	ROM	ETEI	R, MI	LLIM	ETR	ES.		•		
° C.	640	650	660	670	680	690	700	710	720	730	740	7 50	760	770	780
		-"						"				" .		"	"
IO	30.6	31.1	31.5	32.0	- 1		33.3	33.7	34.2	34.6	35.0	35.5	35.9	36.4	36.8
 5	30.0	30.2	30.9	31.4		32.2	32.7	33.1	33.6	34.0	34.4	34.9	35.3	35.8	36.2
0	29.4	29.9	30.3	30.8	31.5	31.6	32.1	32.2	33.0			34.3	34:7	35.2	35.6
5	28.8	29.3	29.7	30.5	- 1	31.0	31.2	31.9			33.2	33.7	34.1	34.6	35.0
10	28.2	28.7	29.1	29.6	30.0		30.9				- 1		33.2	34.0	34.4
15	27.6	28·1	28.5					30.7	31.2	31.6	32.0	32.5	32.9	33.4	33.8
20	27.0	, ,		28.4		29.2			30.6	31.0	31.4	31.9	32.3	32.8	33.2
25	26.4					28.6	29.1	29.5	30.0		30.8		31.7	32.2	32.6
30	25.8	26.3	26.7						29.4		30.2		31.1	31.6	32.0
35	25.2	25.7	26.1	26.6	27.0	27:4	27.9	28.3		29.2			30.2	31.0	31.4
40	24.6	25.1	25.2	26.0		26.8					29.0			30.4	30.8
45	24.0			25.4	25.8		26.7			28.0		28.9	29.3	29.8	30.5
50	23.3	23.8	24.2	24.7	25.1	25.5	26.0	26.4	26.9	27.3	27.7	28.2	28.6	29.1	29:

REDUCTION OF ARC INTO TIME.

0	h. m.				
,	m. s.	•	h. m.	•	h. m.
0 1 2 3 4 5 6 7 8	0 0 4 8 0 12 0 16 0 20 0 24 0 28 0 32 0 36	60° 1 2 3 4 5 6 7 8 9	4 0 4 4 4 8 4 12 4 16 4 20 4 24 4 28 4 32 4 36	120° 1 2 3 4 5 6 7 8	8 0 8 4 8 8 8 12 8 16 8 20 8 24 8 28 8 32 8 32
10 1 2 3 4 5 6 7 8 9	0 40 0 44 0 48 0 52 0 56 1 0 1 4 1 8 1 12 1 16	70 1 2 3 4 5 6 7 8	4 40 4 44 4 48 4 52 4 56 5 5 4 5 12 5 16	130 1 3 4 5 6 7 8	8 40 8 44 8 48 8 52 8 56 9 0 9 4 9 8 9 12 9 16
20 1 2 3 4 5 6 7 8	1 20 1 24 1 28 1 32 1 36 1 40 1 44 1 48 1 52 1 56	80 1 2 3 4 5 6 7 8	5 20 5 24 5 28 5 32 5 36 5 40 5 44 5 52 5 56	140 1 2 3 4 5 6 7 8	9 20 9 24 9 28 9 32 9 36 9 40 9 44 9 48 9 52 9 56
30 1 2 3 4 5 6 7 8	2 0 2 4 2 8 2 12 2 16 2 20 2 24 2 28 2 32 2 36	90 1 2 3 4 5 6 7 8	6 0 6 4 6 8 6 12 6 16 6 20 6 24 6 28 6 32 6 36	150 1 2 3 4 5 6 7 8	10
40 1 2 3 4 5 6 7 8 9	2 40 2 44 2 48 2 52 2 56 3 0 3 4 3 8 3 12 3 16	100 1 2 3 4 5 6 7 8	6 40 6 44 6 48 6 52 6 56 7 0 7 4 7 8 7 12 7 16	160 1 2 3 4 5 6 7 8	10 40 10 44 10 48 10 52 10 56 11 0 11 4 11 12 11 16
50 1 2 3 4 5 6 7 8 9	3 20 3 24 3 28 3 32 3 36 3 40 3 44 3 45 3 56	110 1 2 3 4 5 6 7 8	7 20 7 24 7 28 7 32 7 36 7 40 7 44 7 48 7 52 7 50	170 1 2 3 4 5 6 7 8	11 20 11 24 11 28 11 32 11 36 11 40 11 44 11 48 11 52 11 56

50 1 2 3 4 5 6 7 8 9	40 1 3 4 5 6 7 8 9	30 1 2 3 4 5 6 7 8	20 1 2 3 4 5 6 7 8	10 1 2 3 4 5 6 7 8	0" 1 3 4 5 6 7 8 9	•
3°33 3°40 3°47 3°53 3°60 3°67 3°73 3°80 3°87 3°93	2.67 2.73 2.80 2.87 2.93 3.00 3.07 3.13 3.27	2'00 2'07 2'13 2'20 2'27 2'33 2'40 2'47 2'53 2'Co	1°33 1°40 1°47 1°53 1°60 1°67 1°73 1°80 1°87 1°93	0-67 0-73 0-80 0-87 0-93 1-00 1-07 1-13 1-20	0.00 0.07 0.13 0.20 0.27 0.33 0.40 0.47 0.53 0.60	8.

				•	
•				· .	
•				. !	
4					
1					
	- 40				
	•				
•					
± •					
	4				
**					
	,				
1 98		100			
		1			
¥ ,,					
			-3		

INDEX TO RIGHT ASCENSIONS OF STARS.

NAME. R.A.	NAME. R.A.	NAME. R.A. h. m.	NAME. R.A. h. m.	NAME. R.A. h. m.
Andromedæ.	Arietis.	Cassiopeiæ.	Crateris.	Gruis.
α 0 4	α 2 2	α 0 36	8 11 15	α 22 3
β Ι 5	β 1 50	β ο 5	Chusia	β 22 38
γ Ι 59	P 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.	γ 0 52	Crucis.	γ 21 49
δ ο 35	Aurigæ.	δ Ι 20	α 12 22	ε 22 44
μ 0 52	.α 5 11	ε Ι 48	β 12 43	Herculis.
	β 5 53	~ .	8 12 11	α 17 11
Aquarii.	ε 4 56	Centauri.		β 16 27
α 22 2	$\eta \dots \int I$	α 14 34	Cygni.	γ 16 18
β 21 27	θ 5 54	β 13 58	α 20 39	δ 17 12
γ 22 17	L 4 52	γ 12 37	β 19 27	ε 16 57
δ 22 50		δ 12 4	γ 20 19	η 16 38
ε 20 43	Boötis.	ζ 13 50	δ 19 42	$\mu \dots 17 43$
λ 22 48	α 14 12	η 14 30	ε 20 43	π 17 12
$c^2 \dots 23 5$	β 14 59	θ 14 2	ζ 21 9	
· · · ·	γ 14 29	t 13 16	Delphini.	Horologii.
Aquilæ.	δ 15 12	x 14 54	α 20 36	α 4 11
α 19 47	η 14 41	λ 11 32	ε 20 29	Hydræ.
β 19 51	ρ 14 28	μ 13 45	D	α 9 24
γ 19 42		~	Doradus.	γ 13 14
8 19 21	Cancri.	Cephei.	$\alpha \dots \dots 4 3^2$	ε 8 42
ζ 19 2	β 8 12	α 21 17	β 5 33	ζ 8 51
θ 20 7	P 0 22	β 21 28	Draconis.	ν 10 46 ξ 11 29
λ 19 2	Canis Majoris.	ζ 22 8	α 14 2	π 14 2
	α 6 41	Coti	β 17 29	
Aræ.	β 6 19	Ceti.	Υ 17 55	Hydri.
α 17 25	δ 7 5	α 2 58	δ 19 13	α Ι 56
β 17 18	ε 6 55	β 0 39	ζ 17 9	γ 3 49
ζ 16 52	ζ 6 17	$\begin{cases} \gamma & \dots & 2 & 39 \\ \delta & \dots & 2 & 35 \end{cases}$	η 16 23	Indi.
	η 7 21	ζ 1 47		α 20 32
Argus.	02 7 0	θ 1 20	Eridani.	Leonis.
α 6 22	22 6 58	ι ο 15	α• 1 35	α 10 4
β 9 12	a : 36: :		β 5 4	β 11 45
γ 8 7	Canis Minoris.	Circini.	γ 3 54	γ ¹ 10 15
δ 8 42	α 7 35	α 14 36	δ 3 39	δ 11 10
ε 8 2 Ι	β 7 23	Calamahan	$\theta \dots \dots 3^{29}$	ε 9 41
ζ 8 Ι	Conum Vonet	Columbæ.	υ ⁴ 4. 15	0 11 10
0 10 40	Canum Venat.	$\alpha \dots \dots 5 37$	φ 2 14	0 9 37
k 9 15	12 12 52	β 5 48	53 4 34	ρ 10 28
λ 9 5	Conrigorni	Coronæ Borealis.		Leporis.
μ 10 43	Capricorni.	α 15 31	Geminorum.	α 5 29
v 6 35	$\beta \dots \dots 20 13$		α 7 29 β 7 40	$\beta 5^{25}$
ξ 746	δ 21 42	Corvi.	β 7 40 γ 6 33	ε 5 2
$\pi \cdots 7 $ ¹⁴	ζ 21 22	β 12 30	$\begin{bmatrix} 1 & & & 7 & 15 \end{bmatrix}$	μ 5 9
ρ 8 4 σ 7 27		γ 12 12	ε 6 39	Libræ.
τ 6 48	Carinæ.	8 12 26	μ 6 18	α 14 46
Ψ 9 ²⁷	q 10 14	ε 12 6	ξ 6 41	β 15 13
	ا ا		•	

NAME. R.A. h. m.	NAME. R.A. h. m.	NAME. R.A.	NAME. R.A.	NAME. R.A.
Lupi. α 14 36 β 15 53 ζ 15 6 113 G 15 30 Lyncis. 40 9 16	Orionis. α 5 51 β 5 11 γ 5 21 δ 5 32 ζ 5 37 ι 5 31 « 5 44	h. m. Phœnicis. α 0 22 β 1 2 γ 1 25 Pictoris. α 6 47	Scorpii. α 16 24 β¹ 16 1 γ 15 55 ε 16 45 θ 17 31 ι¹ 17 42 κ 17 37	h. m. Triang. Aust. α 16 40 β 15 48 γ 15 11 Tucanæ. α 22 13 Ursæ Majoris. α 10 59
Lyree. 2 18 34 β 18 47 γ 18 56 Mali. a 8 40 Monocerotis.	Pavonis. α 20 19 β 20 37 δ 20 1 η 17 38	Piscis Australis α 22 53 Piscium. γ 23 13 η 1 27 ω 23 55	λ 17 28 π 15 54 σ 16 16 τ 16 31 υ 17 25 Serpentis. α 15 40 γ 15 53	β 10 57 δ 12 11 ϵ 12 50 ζ^1 13 21 η 13 44 θ 9 27 ι 8 54 λ 11 59 μ 10 17
Muscæ. α 12 32 β 12 41	Pegasi. α 23 I β 23 ο γ ο 9 ε 21 40 %	Reticuli. α 4 13 Sagittarii.	ε 15 47 η 18 17 μ 15 45 Tauri. α 4 31	0 8 23 ψ 11 5 Ursæ Minoris. β 14 51 γ^2 15 21 Velorum.
Ophiuchi. α 17 31 β 16 10 ε 16 14 ζ 16 33 η 17 6 θ 16 54 λ 16 27	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	γ 18 ο δ 18 16 ε 18 19 ζ 18 57 η 18 12 λ 18 23 μ 18 9 ξ 18 53 π 19 5 σ 18 50	$β \dots \dots 5 21$ $γ \dots \dots 4 15$ $ε \dots \dots 4 24$ $ζ \dots \dots 5 33$ $η \dots \dots 3 43$ $ο \dots \dots 3 20$ $17 \dots \dots 3 40$ Telescopii. $α \dots \dots 18 21$	Virginis. α 13 21 β 11 46 γ 12 37 δ 12 51 ε 12 58 ζ 13 30 η 12 16
72 18 3	ζ 3 52 ζ 3 49	τ 19 2 φ 18 40	Trianguli. β 2 5	Volantis. δ 7 17

INDEX.

<u> </u>	
Absons as of 8	M
Abaques, use of, 6	Mcreury-surface, cleaning of, 24
Adjustments of the Astrolabe, 15	Meridian stars, fewness of, 5
Altitude of stars observed, 10, 33, 39	Missed observations, 32
effect of errors in assumed, 38	
American Ephemeris stars, 4	N
Artificial horizon, 13	Neutical almanas stars A
preparation of, 23	Nautical almanac stars, 4
Auto-collimator, 14	0
,, use of, 15	
Azimuth, calculation of, 35	Observing, instructions for, 22
" movement of telescope in, 25	Orientation of astrolabe, 16
Azimuth-clamp, 14	
Azimuth-limits of star-tables, 5	P
В	Parts of the astrolabe, names of, 11
	Precision of geographical position obtainable with
Bad observations, detection of, 39, 44	the small astrolabe, 1, 3
Barometer and thermometer readings, 21, 32, 42, 47	Precision, relative, of astrolabe and sextant, 49
C	,, ,, of astrolabe and theodolite, 52
Chronometer, allowance for rate of, 42	Principle of the prismatic astrolabe, 8
	Prism, 9, 10
Chronometer-error, approximate, 36	,, adjustments of, 15
,, final determination of, 38	Programmes, preparation of, 18
Chronometers, transport of, 29	areginates, proposition on, 10
,, use of, 31 Circle, horizontal, 13	R
Claude and Driencourt, vi, 1, 7	5
Clip-screw, 11	Rate of chronometer, allowance for, 42
of 1E 00	Refraction, allowance for variations in, 42, 47
Collimation, adjustment for, 15	" table of, 278
Compass, 13	8
and of in orientation 10	
Computation, 3, 7, 33, 40	Sector, 11
compatition, 0, 1, 00, 10	,, use of, 13, 16
D	Sextant compared with astrolabe, 2, 48
Dent "time-of-flight" watch, 28	Sheltering of astrolabe, 22
	Sites for observation, selection of, 22
E	Stars, index of right-ascensions of, 280
Electric lamps, use of portable, 22	,, number to be observed, 5
Equal altitudes, principle of, 8	Star-images, finding of, 26
,, with the sextant, 50	,, apparent motion of, 27
,, with theodolite, 51	,, position in field of telescope of, 26
Example of method of computation, 40	Star-tables, 55-277 ,, conditions guiding limits of, 4
	Stop-watch, use of, 29
77: 11 6 4 1 4 -6 10	btop-watch, uso oi, 20
Field of telescope, extent of, 12	т
,, ,, position of stars in, 26	m 11. for maluring are to time 970
G	Table for reducing are to time, 279
Gauss, 48	,, of refractions at altitude 600, 278
Graphic construction, 37	,, of right-ascensions of stars, 280
,, example of, 41	Telescope, 10 Theodolite compared with astrolabe, 50
н	Three-star observations, 43
	Time, calculation of local, 35
Horizon, artificial, 13	Times, manner of recording, 28
,, preparation of, 23	Tremors of mercury horizon, effect of, 27
1	Tripod, 14
•	Two-star observation, 45
Illumination of telescope-field, 12, 23	
Images of stars, finding of, 26	V
" " " apparent motion of, 27	N 41 114 f 1
J	Verticality of images, adjustment for, 26
	w
Jobin, maker of astrolabe, 1	
•	Watches, 29

Latitude, preliminary approximate, 33 final determination of, 38

adjustment for, 15

Watches, 29
Wind, effect of, 54
" protection from, 22
Wind-screen, 14, 25
Wireless time-signals, use of, 30
Woodroffe, Col., v, 1

			10	ł
				*
			141	
		<i>t</i>		
			•	
			•	
r ·				
	•			
		•		
			•	
			:	
		•		
**				
	,			
•				

BALL'S

ASTROLABE DIAGRAM

- DESIGNED FOR FACILITATING THE PREPARATION OF PROGRAMMES OF STARS TO BE OBSERVED WITH THE PRISMATIC ASTROLABE, IN ALL LATITUDES FROM 55° N. To 55° s.
- This diagram will be found to effect a great saving of time and labour in the preparation of programmes of observation on geodetic and boundary surveys, where the larger forms of astrolabe and stars fainter than the fourth magnitude are employed. The hour angles can be read off at sight to the nearest minute of time, and the azimuths to the nearest half-degree, for any star observable in any degree of latitude between 55° N. and 55° S., the arguments being the latitude of the place and the polar-distance of the star.
- The diagram is mounted on cotton to stand handling in the field, and is conveniently bound in a strong cover $17 \times 11\frac{1}{2}$ inches, with explanatory introduction.
- Published by the Egyptian Government at the Government Press, Cairo, and to be obtained either from the Government Press, Cairo, or from Messrs. Wesley & Son, Essex Street, Strand, London.

PRICE P.T. 60, or 12s. 6d.

Govt. Press 4175-1918-250 ex.